

Published Bi-Monthly

Vol. 1 #5 May/June 1988

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\$3.50 Canada

# **CoCo Clipboard Magazine**

THE NEWEST, MOST INDEPTH MAGAZINE FOR TANDY'S COLOR COMPUTER 2 & 3

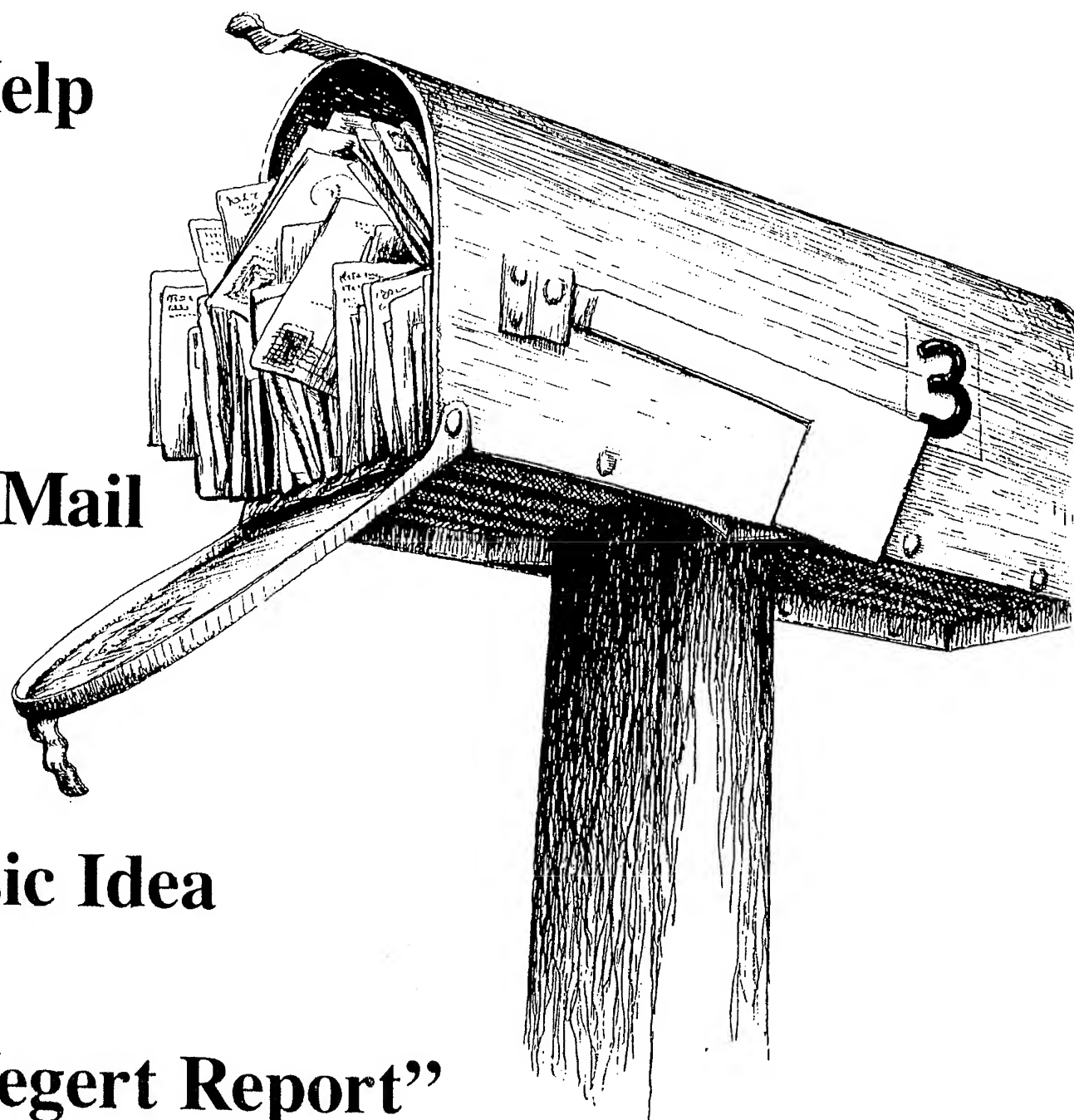
## **Database Tutorial Pt. III**

## **Basic Help**

## **Reader Mail**

## **The Basic Idea**

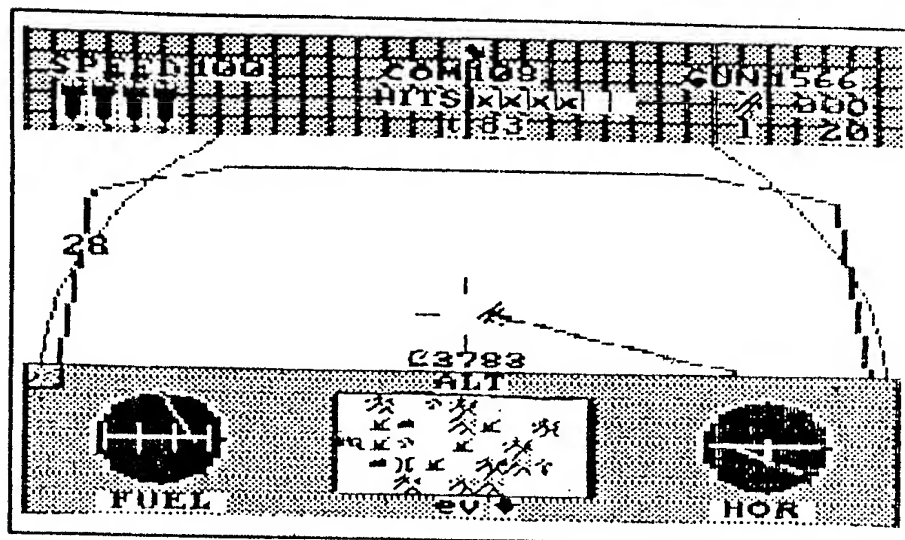
## **The "Wegert Report"**



Jim Bennett 1988



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**A C E S** is a high resolution, completely machine language game of aerial warfare in WWI. Player flies on many missions to bomb enemy targets including airfields, enemy headquarters, anti-aircraft batteries, bridges and factories, but not player's own air base. He must dodge mountains and dogfight with the enemy's best, including, if unlucky, members of the dreaded Flying Circus. After he shoots down five planes he becomes an ACE and receives special consideration; but the game is far from finished. **A C E S** averages about 82 targets and over 100 enemy aircraft per game.

**A C E S** plays in real time and displays flight simulated dash and controls. Operates from the keyboard. Included in the display is a high resolution mini-screen featuring terrain, targets, and player's relative ground position. There are 8 zones in each map which changes as player flies over it. Game Save. (It could take days to win!) In addition, **NEWMAP** is included to allow for the creation of a zillion new maps. **A C E S** was created in part with AGS, developed by Ken Schunk. For all CoCo's.

**WAR AT SEA:** Wooden Ships simulate ship to ship battles during the 18th Century. Player controls a number of sailing ships from different nations and must pit his seamanship against the computer or another player.

**RED ALERT:** a starship combat simulator. Object of the game is to defeat the computer controlled enemy vessel by using your ship's capacities, strategic maneuvers, and your own smarts.

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<b>Beach Head</b>	\$17
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<b>Fire &amp; Steel:</b> Waterloo Campaign (CC64K D HR MLS)	\$22
<b>Luftflotte:</b> Battle of Britain (CC32K SG MLS)	\$25
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<b>Final Frontier:</b> War in Space (CC32K D HR MLS)	\$25
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<b>Midway:</b> The Turning Point in the Pacific (CC32K HR MLS)	\$20
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<b>Tunis:</b> War in the Desert (CC32K SG B)	\$15
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CoCo Clipboard Magazine(TM)  
is published bi-monthly (6 times a  
year) by

CoCo Clipboard Magazine  
3742 U.S. 20, Box 3  
Fredonia, N.Y. 14063  
(716) 679-0126

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Subscriptions to CoCo Clipboard  
magazine are \$12.00 per year for 6  
issues or \$23.00 for two years until  
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After 8/1/88 single year (6 issues)  
subscription will be \$15.00 and two  
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# CoCo Clipboard Magazine

Vol. 1 Issue 5 May/June 1988

## TABLE OF CONTENTS

<b>Reader Mail</b> .....	page 4
<b>From the Desk of</b> by Darlene and Ted Paul.....	page 7
<b>DataBase Tutorial Pt. III</b> by Rush Caley.....	page 8
<b>The Basic Idea</b> by Randy Krippner.....	page 16
<b>Master Basic09</b> by Bill Brady.....	page 21
<b>Basic Help</b> by Bill Bernico.....	page 22
<b>CoCo 'N Amateur Radio</b> by Mike Dooley KE4PC.....	page 23
<b>Quick Forecasting</b> by Jim DeStafeno.....	page 27
<b>Line Input with Editing (Basic09)</b> by Bob van der Poel.....	page 34
<b>Product Reveiws</b> by Ralph Dahlgren and Mike Dooley.....	page 37
<b>The "Wegert Report"</b> by Steve Wegert.....	page 39

\* \* \* \* \*

ClipDisk Ordering Information.....	page 13
Subscription Information.....	page 15
Back Issue Information.....	page 41
Advertising Information.....	page 18
Clipboard Coupons.....	page 14

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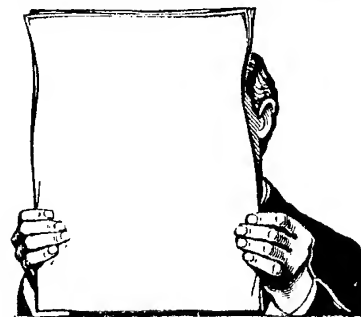
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# Reader Mail



Ted:

Ran across a mention of your new magazine in one of the forum messages. Thought you might like some feedback.

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You can pencil my name into your list of subscribers. I wish you all the best in getting the CoCo Clipboard off the ground. Surely there are enough of us out there to support a serious magazine for the CoCo!

Steve Kirby

Dear Steve:

Thanks for the vote of confidence! Subscriptions are growing every week and we couldn't agree more about the serious uses of the CoCo. Read on!

Dear Darlene:

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I'll be looking forward to reading CoCo Clipboard. I am especially interested in OS-9 now that I've got my feet wet with Level II on my CoCo 3, and also in the C-Programming language.

Judy Leo  
Skillman, NJ

Dear Judy:

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That's it for now. Best of luck as long as you keep up the good work you have my support.

John R. Hampton  
Keyport, NJ

Dear John:

Here's your letter John. Ok readers - let's give John some help!

Dear Sir:

I was pleased to read in Van der Poel newsletter that a new CoCo magazine is being published. Will it be distributed in Canada?

I belong to a Halifax, Nova Scotia and Moncton, New Brunswick CoCo club and will bring it to members attention.

I hope you can send me a copy and details of subscription etc.

Dr. Patrick E. Conen  
Halifax, Nova Scotia  
Dear Dr. Conen:

The information you asked for is on the way and thanks for spreading the word about Clipboard in eastern Canada!



Dear Sir:

I was impressed with your Jan/Feb issue. The future of the COCO is OS9 and MultiView. I recommend that you include routine articles and tutorials on OS9, Basic09 and "C" and MultiView Programming. We need an article comparing the various hard disk systems that are available. We need reporting of inside Tandy info and rumors. I think you have a bright future if you pattern your approach after PC Magazine. We need this type of periodical for the CoCo community. Keep up the good work.

James Neukam

Dear James:

We think that the CoCo has a great future too. Not only do we see new software and hardware for the CoCo 3, but also continued innovative programs for the CoCo 2. As far as rumor goes we know that some computer magazines do publish a "Heard 'Round These Parts" style column. We have heard many rumors as well. We won't however confuse the situation by publishing anything we can't verify. We've established a cordial relationship with Ed Juge and his staff at Tandy and with many of the third party suppliers. When the products are ready we'll be right here to give the facts - just the facts. Apologies to Joe Friday.

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### Sample Menu:

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  2. Busi. & Word Processing
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Dear CoCo Clipboard:

Something I would like to see would be how to modify the start up display at least to some other color than the green when OS9 first begins and first gives the Tandy/Microware logo.

I'm enjoying the Database tutorial and the Powergraph - am glad you are publishing stuff geared for OS9, L2, it makes, it seems, like a good idea to prepay if that continues. I also enjoy your format, shinney paper looks classy, but it also has glare and be distracting.

Steve Lejcher  
Burnsville, MN

Dear Steve:

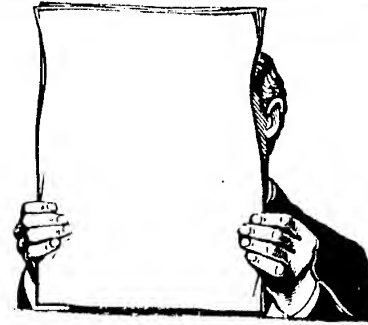
We think our 50# book paper is great also. We enjoy exploring the world of OS9 also, but we haven't forgotten all the folks who enjoy RSDOS. One of the more exciting developments in the RSDOS world has been the development of the RGB Hard Disk System running under and compatible with about 99% of RSDOS software, and the VIP software series. Watch for upcoming in-depth articles on these two systems.

We also have articles planned on using a hard drive (Dml Hare, Burke + Burke) with OS9. We don't know of any 8 bit computer that has had so much innovative developments in hardware and software and still retails for under \$200.00

Continued on page 6



# Reader Mail



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FROM THE DESK OF...

**Ted & Darlene Paul**

This column is supposed to be from the desk of Ted AND Darlene. This time you get to hear from the other half. I am Ted's wife Darlene. I am secretary, assistant editor and circulation manager. I do the bookkeeping, answer many of our letters and log new subscriptions. I design our ads and our covers. Speaking of our cover I am happy to say that we have found a very talented artist, Jim Bennet, to help us with them, and other artwork in Clipboard.

Up to now we have used the best clipart we could find for our magazine, in order to spare our readers the torture of having to look at anything that Ted or I would try to draw. I hope you will enjoy Jim's work and rest assured that we are constantly looking for ways to improve the quality and appearance of CoCo Clipboard Magazine.

We get a lot of letters and they all seem to have a common theme: "Thank you for giving us more than games for our CoCos." That was one of the reasons we started Clipboard. We couldn't find enough information or programs in the CoCo publications we were then receiving. Oh we got a few scraps here and there, but we wanted a whole magazine devoted to the serious Color computer users.

So here we are. You should see me on Clipboard mailing day. There I sit in the middle of my living room floor surrounded by 100+ magazines. My only staff helpers are 8, 5 and 3. They help knock over all my neatly sorted and stacked piles. I start at 5pm and by 1:30 I usually order a pizza. Ted arrives home a little later and we usually pop a Jimmy Stewart or a Jimmy Cagney movie in the VCR - after several hours we need something to keep us awake as the zip codes seem to be doing their own little tap dance across the page! Speaking of mailing I don't want to say that we run up a big postal bill, but "rumor" has it that our local post office has put on two new employees since we started the magazine!

You may have noticed that up till now each issue has been a little longer than the previous one. We plan on staying at 48 pages or now though. This is because our next face lift for Clipboard will be a glossy cover. I'm not sure when, but that's our next goal.

There is one favor you could do us if you could. If you buy a product because you saw it advertised or reviewed in Clipboard, please say so when you order it. If you like Clipboard's emphasis let the advertiser know!

I guess that's it for now. Don't forget to renew your subscription soon so you can still get last year's rate. Write, write and write some more and tell us what you want to see in Clipboard. We're here to bring you what you want. We enjoy hearing from you.

Darlene

Welcome to the many of you who are receiving their very first copy of CoCo Clipboard Magazine! Our subscriptions have taken a dramatic rise over the last several weeks as much of our advertising, and direct mail campaigns have brought in new subscribers.

We also welcome to our pages Mr. Bill Brady. Bill is the author of the WIZ, a superb telecommunication package running under OS9. Bill also edits MOTD the national OS9 users groups news letter. Bill be be doing a column for us called Master Basic09. This will bring to 3 the number of OS9 related columns we carry. Bill's work will be supplanting that of Randy Krippner. Beginning in our anniversary issue (Vol2. #1) in September, Randy will be writing for those folks just getting into OS9 and Basic09. Bill will be handling the "graduate" level course work after that. Bob van der Poel will continue to present his excellent work in Basic09 on independent themes and ideas.

Departing our pages will be Del Searles. Del has been writing about programming under PASCAL for us and back into the Spectrogram days. His schedule has just become over loaded and something had to give. We're sorry it was us, but we understand. Del is an excellent programmer and we wish him all the best in the future. Also on a temporary L.O.A. will be Kraig Brockschmidt. Kraig is interning with MicroSoft and he is very busy. I'm not sure if he's learning from them, or trying to convert them into 6809 and 68xxx code! Be that as it may he will return to our pages, no sure date is set as of yet.

Speaking of dates, this 5th edition will be late again, we're awaiting a copy of the Tandy press release from their spring announcement in New York City on April 21st. We decided to hold the magazine so that any news of new products for the CoCo would be here in Clipboard first. Since this is being written in advance of what and how much is to be released I don't know just where to tell you to look for the articles. Tandy has released a new Greg Zumwalt game called "Amazing World of Malcom Mortar."

Continued on page 33



# Database Tutorial Pt. III

Rush Caley

## PART III: GETTING THE PAYOFF

Before examining the reports, you might be interested in the manner in which the calculations and report procedures are defined and stored. WORKBASE procedures can be stored and executed at any time; thus eliminating repetitive keying of procedures at run time. First look at the calculation procedure marked FIGURE 1. It is very simple. I merely used the formulas provided as given information. The first line EXCLUDES all records with ACT RUN TIME not greater than zero. This means that we ONLY want to calculate the "GT" type records. Since only those records have the total minutes in the run entered, only those records will be updated. Look again at the procedure, and you can see that it first calculates the STD. RUN TIME; secondly the DOWN TIME; and lastly the EFFICIENCY. During future calculations, the records calculated previously will be recalculated and the new one will merely overwrite the information again so that these records will not contain faulty information. At report time, all the user does is open the file and execute the calculation prior to printing the report.

The report procedures are much more detailed. See FIGURE 2. The report is formatted by answering a series of questions. Notice in the sample procedure that I have told the program to sort the database prior to printing the report. This means your datafile can remain unchanged while it will be sorted differently just for this one report.

When you go back to the datafile, it will appear the way you left it. This feature is valuable and saves all the time that many programs require in sorting and resorting the file. For this particular report, I have sorted first by DOWNTIME in DESCENDING order; and secondly, by PRODUCT in ASCENDING order. This means that the report will be in alphabetical order by PRODUCT and that the instances of DOWNTIME reported for EACH PRODUCT will be from the HIGHEST to the LOWEST. Notice that in the listing of parameters it asks for KEY DATA NAME and next to that I have selected PRODUCT. This tells us that the KEY field in the file will be PRODUCT and that the subtotals for numeric fields will occur EACH TIME a new PRODUCT is listed. Notice also that most of the fields in the report will be reported as DATA FIELDS with their stored information. However, PRODUCT will be used only as a HEADING. So when you look at the report, you will see a heading with the

PRODUCT name and beneath it, all listings of DOWNTIME occurrences in descending order of time lost. I have also listed the format for the report that acts as a summary for the report. See FIGURE 3. It is the listing of the "GT" records which summarize or total the statistics for shifts.

Like the calculation procedure, these report formats reside on disk and can be executed at any time. For the report definition, I did not include any selection criteria. I allowed the record selection to be made from within the datafile so that record selection criteria would not have to be updated in the report procedure each time one might run the report.

As promised, I'll make some general observations about the reports; but you should study all of them to see what types of inferences you might make. There is nothing unusual about these reports. No special effort was made to input data that might force one to any particular conclusions. They are mainly random samples of daily reports sent by the person requesting the database. Basically, I tried to have a balance of product types, shifts, and downtime types to produce a typical report. Whatever conclusions you might reach, one thing can be said. The database and the supporting report procedures do meet the requirements of the "client". It quantifies and qualifies the data concerning downtime so that it can be studied and followup measures can be taken to overcome specific problems.

One possible benefit to these reports lies in the area of equipment maintenance. If particular equipment exhibits repeated problems, it can easily be spotted and appropriate measures can be taken. This database might well be used to update a separate datafile that tracks maintenance and repair of all mechanical equipment. Maintenance of equipment is not only important because it causes delay, but also because accurate assessment of capacities have a definite impact upon the determination of STD SPEED for any given product.

The reports also reflect a high instance of departmental downtime. Look at the report that is sorted by DOWNTIME TYPE and examine the notes per departmental downtime. They give an indication of a basic problem. However, whenever we are dealing with people rather than machines, isolating root problems becomes a bit more difficult. For example, on 1/5/88 a departmental downtime of 11 minutes is recorded.



The reason given is that "the hand cappers are not keeping up". That may be an apparent cause of the downtime; but we don't know whether that condition is due to the employee's laziness, lack of capacity, or emotional state: perhaps his mother died that morning.

Figure 2

```
std. rpt. proc.=>NEWPROD
      sort [DOWNTIME      ]JD
      sort [PRODUCT      ]JA
      ***REPORT# 1
data field border => 32
page heading      =>yes
top margin        => 0
small size print  =>yes
page width        => 132
page length       => 66
print rec names   =>no
print data names  =>yes
key data name     =>PRODUCT
page per key value=>no
subtotals         =>yes
total line label  =>LINE TOTALS
grand totals      =>yes
print totals only =>no
      reprt[DATE          ]JD
      reprt[SHIFT #       ]JD
      reprt[DOWNTIME      ]JD
      reprt[+             ]JD
      reprt[DWNTIME TYPE]JD
      reprt[+             ]JD
      reprt[REMARKS       ]JD
      reprt[PRODUCT       ]JH
total errors= 0

std. rpt. proc.=>NEWGT
exclude records with ?
      data [ACT RUN TIME]<
      const[ 1.000]:

      ***REPORT# 1
data field border => 32
page heading      =>yes
top margin        => 0
small size print  =>no
page width        => 80
page length       => 66
print rec names   =>no
print data names  =>yes
key data name     =>
page per key value=>no
subtotals         =>no
grand totals      =>yes
print totals only =>no
      reprt[DATE          ]JD
      reprt[SHIFT #       ]JD
      reprt[+             ]JD
      reprt[ACT RUN TIME]JD
      reprt[STD RUN TIME]JD
      reprt[DOWN TIME     ]JD
      reprt[EFFICIENCY    ]JD
total errors= 0
```

Managers need to maintain the morale of the departmental employees and be sure that the tasks are within their ability to meet in the time allotted. Effective management strategies will do more to reduce occurrences of departmental slow-downs than any other band-aid one might dream up. This, of course, is outside the realm of this article. However, the reports can shed enough statistical light on departmental problems so that management has enough basic information to implement a proper course of action.

Looking at the data from the vantage point of the products will also be valuable. Products run that have the highest efficiencies might be scheduled to run together to maximize output and combined efficiencies. This might be an option if the master schedule would not suffer. If you spot certain products that don't reflect the efficiency you expect, and you see a balanced number of reasons for the downtime, you might suspect that the STD SPEED was too high and make an adjustment. Anytime efficiencies are such that you are getting the wrong picture, the impact is not good!

If you can improve efficiency by raising or lowering STD SPEED, two things happen. Your employees will look better, and you will receive a more consistent and accurate picture of efficiency on which you can plan. Inaccurate information is oftentimes more damaging than no information at all.

Information from these reports can be inaccurate in two basic ways. First, you might reflect efficiencies that are too high due to STD SPEED that is set too low when you have greater capacities. Secondly, you might reflect efficiencies that are too low due to STD SPEED set too high in relation to the capacity of your machinery and the ability of people to accomplish tasks in the given time.

Finally, I'd like to reiterate one of the glaring problems in the system the way the "client" is using his information right now. As I pointed out last issue, there is a radical difference in the "elapsed time" DOWNTIME that shows up on the paper report of the supervisor and the "calculated" DOWN TIME that is the result of a company formula. Examine all three of the reports. At the top of each report is the summary for all records itemized below. Each "GT" record is listed. Notice that the total calculated DOWN TIME for all records is 169.637 minutes. Now read the bottom line of each of the three detail reports. You will see that elapsed time amounted to 233 minutes. Somewhere out in the twilight zone, there are 63 minutes that just disappear!

Please do not write and tell me how machine capacity "makes up" for lost time; or how higher efficiency runs "average out" the lower efficiency runs. I've already heard these stories. What you have here is a mathematical black hole that has 63 minutes in it!

How many more cases could be filled and what greater efficiency if during those lost 63 minutes cases were being filled? What lower and possibly more accurate efficiencies if the formulas took into account actual time lost? I leave mathematical problems to others, but one



should be aware that there is entirely too much room for inaccurate information and dangerous conclusions. Keeping all this in mind, the database and the reports we designed in this series will do exactly what the person requested. They can serve as an invaluable tool toward solving the primary questions in his working environment.

What I have tried to show in this series is that a database manager is not as difficult to use as it might appear at first glance. I'll repeat something I said in the first article in this series. There are many fine DBMS programs available for the CoCo. The fact that yours

might not operate exactly as the one described here is of no consequence. Conceptual understanding of your requirements, and your goals, will give you a "leg up" with which to begin. Your intimate knowledge of your own business is the key to any payoffs the database might return. So if you have a particular application that is best suited to a DBMS program, have no fear, just prepare and begin.

You don't need to enter all your valuable data the first time around. Set up the file with all the proper fields. Figure out what types of calculations you will need and define the formulas. Then design the reports to meet your requirements. When you do this, all you need to do is enter a handful of simulated

Figure 3

===== 01/31/88 ===== PAGE 1  
THIS IS A SUMMARY OF THE "GT" RECORDS FOR THE PERIOD RECORDED.  
ANYTHING YOU LIKE CAN BE USED IN THESE TITLE LINES.  
THE "GT" REPORT SHOULD BE A QUICK SUMMARY AT THE TOP OF EACH OF THE 3 TYPES OF R

DATE	S +	ACT RUN TIME	STD RUN TIME	DOWN TIME	EFFICIENCY
01/04/88	1	450.000	417.200	32.800	92.711
01/04/88	2	450.000	442.771	7.229	98.394
01/05/88	1	165.000	62.000	103.000	37.576
01/05/88	1	285.000	294.220	-9.220	103.235
01/06/88	2	225.000	215.376	9.624	95.723
01/06/88	2	225.000	198.795	26.205	88.353
		1,800.000	1,630.363	169.637	

THIS REPORT SORTS THE SELECTED RECORDS BY THE SHIFT AND REPORTS DETAILS AND DOWNTIME TOTALS BY THE SHIFT.  
THIS WAY, YOU CAN LOOK AT PRODUCTS RUN AND COMPARE SHIFT EFFICIENCIES FOR RUNNING LIKE PRODUCTS  
THAT HAVE THE SAME STD SPEED.

DATE	+ SHIFT	STA +	SHIFT END +	PRODUCT	DWNTIME TY +	DOWNTIME
SHIFT # : 1						
01/05/88	07:00AM	03:30PM	4/1 GALLON SYRUP	MECHANICAL		45.000
01/05/88	07:00AM	03:30PM	4/1 GALLON SYRUP	ELECTRICAL		38.000
01/05/88	07:00AM	03:30PM	4/1 GALLON SYRUP	DEPARTMENT		30.000
01/04/88	07:00AM	03:30PM	24 OZ. SYRUP	ELECTRICAL		20.000
01/05/88	07:00AM	03:30PM	4/1 GALLON SYRUP	DEPARTMENT		15.000
01/05/88	07:00AM	03:30PM	4/1 GALLON SYRUP	DEPARTMENT		11.000
01/05/88	07:00AM	03:30PM	4/1 GALLON SYRUP	MECHANICAL		8.000
01/04/88	07:00AM	03:30PM	24 OZ. SYRUP	MECHANICAL		5.000
01/04/88	07:00AM	03:30PM	24 OZ. SYRUP	DEPARTMENT		3.000
01/04/88	07:00AM	03:30PM	24 OZ. SYRUP	MECHANICAL		3.000
01/04/88	07:00AM	03:30PM	24 OZ. SYRUP	MECHANICAL		2.000
01/05/88	07:00AM	03:30PM	SPOONABLES	NONE		
Shift Totals						180.000
SHIFT # : 2						
01/06/88	07:30PM	11:59PM	8 OZ. MAYONNAISE	DEPARTMENT		27.000
01/06/88	07:30PM	11:59PM	8 OZ. MAYONNAISE	MECHANICAL		6.500
01/04/88	03:30PM	11:59PM	8 OZ. MAYONNAISE	MECHANICAL		6.000
01/06/88	03:30PM	07:30PM	32 OZ. MAYONNAISE	DEPARTMENT		6.000
01/06/88	03:30PM	07:30PM	32 OZ. MAYONNAISE	MECHANICAL		4.500
01/04/88	03:30PM	11:59PM	8 OZ. MAYONNAISE	DEPARTMENT		3.000
Shift Totals						53.000
						233.000



===== 01/31/88 ===== PAGE 1  
 THIS IS A SUMMARY OF THE "GT" RECORDS FOR THE PERIOD RECORDED.  
 ANYTHING YOU LIKE CAN BE USED IN THESE TITLE LINES. THE "GT REPORT SHOULD BE  
 A QUICK SUMMARY AT THE TOP OF EACH OF THE 3 TYPES OF REPORTS.

DATE	S +	ACT RUN TIME	STD RUN TIME	DOWN TIME	EFFICIENCY
01/04/88	1	450.000	417.200	32.800	92.711
01/04/88	2	450.000	442.771	7.229	98.394
01/05/88	1	165.000	62.000	103.000	37.576
01/05/88	1	285.000	294.220	-9.220	103.235
01/06/88	2	225.000	215.376	9.624	95.723
01/06/88	2	225.000	198.795	26.205	88.353
		1,800.000	1,630.363	169.637	

THIS REPORT SORTS THE SELECTED RECORDS BY "DOWNTIME TYPE" AND ALLOWS SUBTOTALS BY TYPE WITH THE REMARKS AVAILABLE TO SEE.  
 AS USUAL, ANYTHING YOU WANT TO TYPE IN HERE IN THE TITLE LINES  
 IS OK. THE USER HAS 3 LINES. IN THIS CASE, THE REPORT IS 132 COLUMNS--SO YOU WOULD HAVE 132 CHARACTERS.

DATE	S +	DOWNTIME	PRODUCT	REMARKS
DOWNTIME TYPE: DEPARTMENT				
01/05/88	1	30.000	4/1 GALLON SYRUP	WAITING FOR PROD. SWITCHING PRODUCTION LINE.
01/06/88	2	27.000	8 OZ. MAYONNAISE	WAITING FOR PROD. SWITCHING PRODUCTION LINE
01/05/88	1	15.000	4/1 GALLON SYRUP	LABEL OPER. CAN'T ORIENT HANDLES FAST ENOUGH
01/05/88	1	11.000	4/1 GALLON SYRUP	HAND CAPPERS NOT KEEPING UP
01/06/88	2	6.000	32 OZ. MAYONNAISE	WAITING FOR INSPECTOR
01/04/88	1	3.000	24 OZ. SYRUP	FLAVOR CHANGES
01/04/88	2	3.000	8 OZ. MAYONNAISE	WAIT FOR INSPECTOR
TYPE TOTALS		95.000		
DOWNTIME TYPE: ELECTRICAL				
01/05/88	1	38.000	4/1 GALLON SYRUP	PROBES ON AIR VALVE TO FILLER NOT WORKING.
01/04/88	1	20.000	24 OZ. SYRUP	FILLER PUMP: REPLACE HEATER IN STARTER.
TYPE TOTALS		58.000		
DOWNTIME TYPE: MECHANICAL				
01/05/88	1	45.000	4/1 GALLON SYRUP	ADJ. INFEED* ADJ. FILL PUMP*ADJ. DISCHARGE.
01/05/88	1	8.000	4/1 GALLON SYRUP	ADJUST BOTTLE WASH
01/06/88	2	6.500	8 OZ. MAYONNAISE	ADJUST BOTTLE WASH
01/04/88	2	6.000	8 OZ. MAYONNAISE	FIX THE WHATCHAMACALLIT
01/04/88	1	5.000	24 OZ. SYRUP	CAPPER: ADJUST CHUTE HEIGHT & AIR PRESSURE.
01/06/88	2	4.500	32 OZ. MAYONNAISE	FIX THE WHATCHAMACALLIT
01/04/88	1	3.000	24 OZ. SYRUP	FILLER: ADJUST INFEED
01/04/88	1	2.000	24 OZ. SYRUP	RAILS: ADJUST SPEED
TYPE TOTALS		80.000		
DOWNTIME TYPE: NONE				
01/05/88	1		SPOONABLES	ONE FLAVOR-ONLY 2 LBL. CHANGES- NO DELAYS.
		233.000		

records to meet all the specific conditions you will encounter. Then test the calculations to see that the database is properly updated and run the reports to see if they look as you expected. If everything goes as planned, you're ready for the real thing. If you encounter problems, isolate the causes and readjust the file structure, calculation or whatever. Delete the records and start from scratch. Sooner or later, you will get what you want.

The final WORKBASE template that performs the function we have explored in these last three issues was not written in one sitting. I was totally unfamiliar with the concepts and workings of the business at hand. That is an obstacle you won't have with your business. It took many hours of trial and error to get what the client wanted. I remember I had a wonderful database set up in about an hour and a half. IT WAS WHAT I THOUGHT the client asked for. After



costly phone conversations, and multiple MCI and EASYPLEX transmissions, I finally understood. The final template was version 5.2!! The reports had many more versions.

Again, DON'T let fear get in the way. The CoCo is a marvelous computer. With the right software and your persistence, you can build tools that will return the time invested many times over.

If you have any questions about any of your database projects, feel free to write or call me personally. Sometimes a thought from an outside observer is worth hours glaring at a blinking cursor.

I would like to conclude by giving proper thanks to Ben Stokes of WORKBASE DATA SYSTEMS for providing such a powerful database manager with which to work. The resulting template for use specifically with WORKBASE has been copy-righted by Emerson Computer Services.

POKE 113,0:EXEC40999

Figure 1

```
calc. procedure=>NEWCALC
exclude records with      ?
  data [ACT RUN TIME]not>
  const[      0.00 ]:

  data [STD RUN TIME]=
  data [ACT. UNITS ]/
  data [STD SPEED ]:

  data [DOWN TIME ]=
  data [ACT RUN TIME]-
  data [STD RUN TIME]:

  data [EFFICIENCY ]=
  data [STD RUN TIME]/
  data [ACT RUN TIME]*
  const[      100.00 ]:

total errors= 0
```

=====

THIS REPORT IS SORTED TO SUBTOTAL BY THE PRODUCT RUN FOR THE RECORDS SELECTED.  
IT WILL HELP TO IDENTIFY WHETHER OR NOT A CERTAIN PRODUCT HAS INHERENT PROBLEMS DURING A RUN  
THAT CAUSES EXCESSIVE DOWNTIME.

=====

DATE	S	DOWNTIME	+	DWNTIME	TY	+	REMARKS
-----							
PRODUCT : 24 OZ. SYRUP							
01/04/88	1	20.000	ELECTRICAL	FILLER PUMP: REPLACE HEATER IN STARTER.			
01/04/88	1	5.000	MECHANICAL	CAPPER: ADJUST CHUTE HEIGHT & AIR PRESSURE.			
01/04/88	1	3.000	DEPARTMENT	FLAVOR CHANGES			
01/04/88	1	3.000	MECHANICAL	FILLER: ADJUST INFEEED			
01/04/88	1	2.000	MECHANICAL	RAILS: ADJUST SPEED			
-----							
LINE TOTALS		33.000					
PRODUCT : 32 OZ. MAYONNAISE							
01/06/88	2	6.000	DEPARTMENT	WAITING FOR INSPECTOR			
01/06/88	2	4.500	MECHANICAL	FIX THE WHATCHAMACALLIT			
-----							
LINE TOTALS		10.500					
PRODUCT : 4/1 GALLON SYRUP							
01/05/88	1	45.000	MECHANICAL	ADJ. INFEEED* ADJ. FILL PUMP*ADJ. DISCHARGE.			
01/05/88	1	38.000	ELECTRICAL	PROBES ON AIR VALVE TO FILLER NOT WORKING.			
01/05/88	1	30.000	DEPARTMENT	WAITING FOR PROD. SWITCHING PRODUCTION LINE.			
01/05/88	1	15.000	DEPARTMENT	LABEL OPER. CAN'T ORIENT HANDLES FAST ENOUGH			
01/05/88	1	11.000	DEPARTMENT	HAND CAPPERS NOT KEEPING UP			
01/05/88	1	8.000	MECHANICAL	ADJUST BOTTLE WASH			
-----							
LINE TOTALS		147.000					
PRODUCT : 8 OZ. MAYONNAISE							
01/06/88	2	27.000	DEPARTMENT	WAITING FOR PROD. SWITCHING PRODUCTION LINE			
01/06/88	2	6.500	MECHANICAL	ADJUST BOTTLE WASH			
01/04/88	2	6.000	MECHANICAL	FIX THE WHATCHAMACALLIT			
01/04/88	2	3.000	DEPARTMENT	WAIT FOR INSPECTOR			
-----							
LINE TOTALS		42.500					
PRODUCT : SPOONABLES							
01/05/88	1		NONE	ONE FLAVOR-ONLY 2 LBL. CHANGES- NO DELAYS.			
-----							
		233.000					



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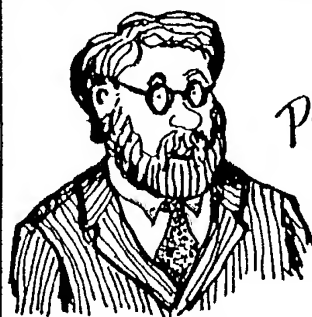
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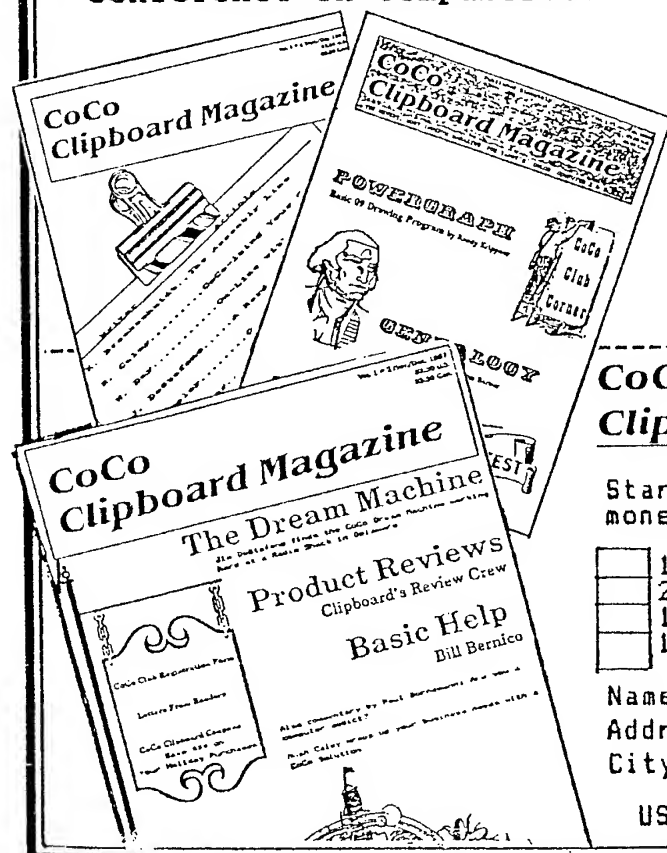
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5



# The Basic Idea

Randy Krippner

This month The 9th Power takes a vacation. It will be back in the next issue. This time we're going to be taking a look at Extended Color BASIC. But first let's take care of some old business.

In issue # 3 there was a typo in the procedure file used to set up the device window for PowerGraph. The "o1" in the "display" line should be a "01". Also several people have experienced what seems to be a lock-up when using the keyboard mouse with PG. The keyboard mouse responds correctly when on the drawing screen, but when the menu is popped up, the pointer fails to respond to the arrow keys.

If this happens to you, the system has not crashed. This problem crops up when a program pops up a window that is smaller than a full screen. Under plain OS9 L2, the mouse pointer, the arrow that moves around on screen, is restricted to the boundaries of the current active window. The pointer cannot be placed at a location outside of those boundaries. If the mouse is located at coordinates 150,100, for example, and a window that is 100 X 80 pixels is popped up, the mouse pointer will not respond until the mouse coordinates are less than 100 horizontally and 80 vertically. So if you have been drawing with the keyboard mouse, pop up the menu and the pointer fails to respond, it's because the pointer location can't be updated because the coordinate of the window boundaries.

When using the mouse or joystick this is no big deal; just move it around until the pointer responds. It is a problem with the keyboard mouse because there is no physical reference to where the mouse may be located. All you can do is hold down the up arrow for a time, then hold down the left arrow. Repeat until the pointer starts to move. The easiest way to deal with it is to move the pointer into the menu window area BEFORE you call up the menu. Best of all, get the high res joystick interface.

Multi-View, by the way, cures this difficulty (along with a few others). MV takes over control of updating the pointer position, and is independent of the size of the active window.

But PowerGraph will not run under MV without minor changes. Multi-View makes some changes to the mouse driver so it handles updating the pointer location automatically. Since the Read Mouse procedure of PowerGraph tries to update the pointer location itself, this causes a con-

flict that will result in the mouse failing to respond correctly. The easiest way to deal with it is to just delete the "putgc" line in the ReadMouse procedure. This line puts the graphics cursor (pointer) at the correct coordinates, and is not needed if using Multi-View.

The procedure file used to create the graphics window is no longer needed either under MV because Multi-View will create the window for you. But you need an AIF file for PowerGraph to set the window to the correct type, the 16 color, 320 X 192 mode, because Multi-View defaults to a 4 color mode. You also need to make sure that the stdpats-16 file is merged into the system.

Many of the people who read Coco Clipboard are either already programmers or are interested in learning how to write programs. So this month we're going to take a look at some of the problems that can crop up while developing software, and how the problems can be dealt with. Since BASIC is the language most people are familiar with, we'll use it to present some useful subroutines that can help make a programmer's life a little easier.

At one point or another, every beginning programmer writes a piece of code that looks something like this:

```
10 INPUT "NAME: "; NA$
20 INPUT "ADDRESS: "; AD$
30 INPUT "CITY: "; CI$
```

Can you tell what's wrong with this code? Sure, it works. They prompt a person to enter his or her name, address and city. But look at it. It's tacky. It's unprofessional looking. Simple input routines like this went out with paper tape and teletype machines. People have come to expect something a bit more professional looking.

But designing a nicely formatted, attractive screen display for inputting data from the keyboard can be very difficult, especially from BASIC. Why? Because the three main methods of obtaining keyboard input are all unsuited for use on screen displays that mimic paper forms where the user merely has to fill in the blanks.

INPUT, the function used above, is totally unsuited for use on a fixed format screen display. It prints a question mark that is neither



necessary nor attractive. When the user is done typing in the information and presses ENTER, it generates a carriage return that totally messes up your screen display.

It also has another drawback in that it will not accept a comma. If the user would type something like "Jones, Herman" on line 10, only the "Jones" would be accepted. INPUT thinks that anything following a comma is supposed to be placed in a second variable.

LINEINPUT is a bit better. It will accept commas and does not print a question mark, but it still generates a carriage return when the user presses ENTER.

Finally there is INKEY\$. This function is totally different. It accepts only a single keystroke. It does not echo (print) the character typed on the screen. It doesn't wait around for the user to make up his mind what key to press, either. It has to be placed inside of a loop so it keep scanning the keyboard.

At first glance, INKEY\$ seems suitable only for getting single keystroke responses, such as Y for yes and N for no. But INKEY\$ is actually just what we need to design a keyboard input routine that will do everything we need.

What do we need? Well, let's see... The ideal input routine must, as LINEINPUT does, accept any character typed, including commas. It should not generate a carriage return when the user presses ENTER. It should be able to "get" input from anywhere on the screen. That is, it should echo whatever the user types to the correct location on screen, without disturbing anything else that may already be on the screen. It should restrict the length of what the user types, so the information being typed in cannot overwrite other information on the screen. It should permit the user to backspace to correct mistakes. Finally, it should function smoothly and easily, and be totally transparent to the user. This may sound like a tall order, especially for BASIC. It's not, though. The following two short subroutines do everything described above. They take up only a few lines of code, and are fast enough to keep up even with touch typists under most conditions.

This first routine is for the Coco I/II or Coco 3 in the 32 column mode. Using it is simple. All you need to do is set up two variables and then GOSUB to the routine. LN must be set to the maximum length of the input, and LO must be set to the PRINT @ location where the first character of the field is to be located.

After making the GOSUB to the routine, it takes care of everything else. It prints a line of dots LN dots long to give the user an idea of how long the input should be, along with a cursor character, a ">". It will not let more than LN characters be typed. If the user presses the left arrow key to backspace, it will erase the character to the left of the

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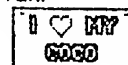
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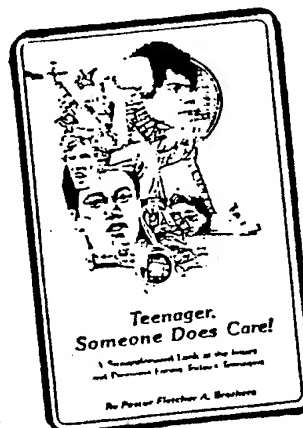
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cursor, update the cursor position and continue. When the user presses ENTER, any dots that remain in the field are erased, and it returns, with the information the user typed stored in TM\$.

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### Listing 1. Universal Input routine for Coco I/II

```
200 PRINT @ LO,STRING$ (LN,".");
:PRINT @ LO,">";: TM$ = "": LE =
  0
210 AK$ = INKEY$:IF AK$ = "" THE
N 210 ELSE IF AK$ = CHR$(13) THE
N 250
220 IF AK$ = CHR$(8) AND TM$ = "
" THEN GOTO 210
230 IF AK$ = CHR$(8) AND LEN (TM
$)>0 THEN TM$ = LEFT$ (TM$,LEN(T
M$)-1): LO=LO-1: LE=LE-1: PRINT
@ LO,">";:IF LE=LN-1 THEN 210 EL
SE PRINT @ LO+1,"."; :GOTO 210
250 IF LE<LN THEN PRINT@LO,STRIN
G$ (LN-LE,32);:RETURN ELSE RETUR
N
```

A quick example: Let's say you had the prompt "NAME:" in the upper left corner of the screen, PRINT @ location 0. The prompt takes up 6 spaces, so the input would start at the seventh position from the start of the screen, PRINT @ location 6. Let's say that you want names restricted to 25 characters.

To use the subroutine in this case you would first set LO to 6, the start of the input location. LN would be set to 25, the maximum length of the desired input. Then your program would do a GOSUB 200 to actually start the routine. The subroutine handles everything else, and when it returns, the name is stored in TM\$. Nothing could be easier. This same procedure can be used to input information from any location on the screen, even lines that are longer than the standard 32 character screen width (as long as the length does not exceed 255).

The following listing is the same input routine modified for use with the Coco 3's 40 and 80 column screen displays. In these display modes the Coco 3 uses LOCATE instead of PRINT @. Since LOCATE requires two parameters, column and row, the code that handles echoing characters to the screen and backspacing is a bit more complex, but aside from that, the code is basically the same.

### Listing 2. Universal Input routine for Coco 3

```
200 TM$ = "": LE=0: LOCATE CO, R
O: PRINT STRING$ (LN,".");: LOCA
TE CO,RO: PRINT ">";: C9=CO
210 AK$=INKEY$:IF AK$=""THEN 210
ELSE IF AK$=CHR$(13) THEN 250
220 IF AK$=CHR$(8) AND TM$="" TH
EN GOTO 210
230 IF AK$=CHR$(8) AND TM$>" TH
EN TM$=LEFT$ (TM$,LEN(TM$)-1): C
O=CO-1: LE=LE-1: LOCATE CO, RO:
PRINT ">";:IF LE=LN-1 THEN 210 E
LSE LOCATE CO+1,RO: PRINT ".";:
LOCATE CO,RO: GOTO 210
```





# CocoTech

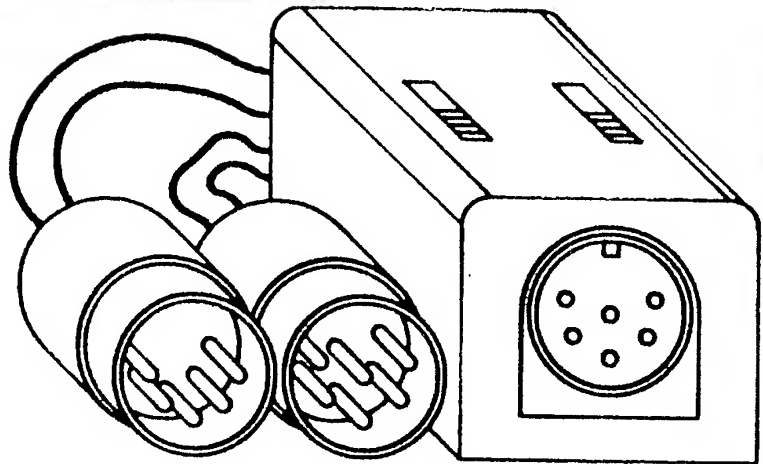
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```
240 IFLE=LN THEN GOTO 210 ELSE L
OCATE CO,RO:PRINTAK$;:TM$=TM$+AK
$:CO=CO+1:LE=LE+1:IF LE=LN 210 E
LSE LOCATE CO,RO:PRINT">";:GOTO2
10
250 LOCATE C9,RO:IF LE<LN THEN P
RINT TM$ + STRING$ (LN-LE,32); E
LSE PRINT TM$;
260 RETURN
```

To use the Coco 3 version you must set three parameters instead of two. LN is still the maximum length of the input. CO and RO must be set to the correct column and row of the screen location where the input is to be echoed. TM\$ returns the actual input the user typed.

Another difference between the two versions is that the Coco 3 routine will not handle multi-line inputs. Input is restricted to the maximum length of the screen display line, 40 or 80 characters.

Before using this routine on the Coco 3, your program should make these two POKES: POKE 63506, 22 : POKE 63772, 33. These two pokes will prevent the Coco 3 from putting unwanted cursors at the ends of PRINTS on the screen. Otherwise the 3 will put an extra cursor (underline character) after each item printed following a LOCATE statement.

These routines suffer from a flaw in BASIC that afflicts almost all BASIC programs that deal with strings; garbage collection. As string space gets used up, BASIC must occasionally take time to re-organize memory. This can cause the computer to appear to lock up for a second or two. (A big improvement over the early TRS-80 computers which could lock up for minutes while garbage collection was in progress.) To reduce the problem, CLEAR as much space for strings as you possibly can.

These routines could be easily modified to perform other tasks as well, such as checking for undesirable characters. It would be simple to build a "filter" into them to restrict input to only alphabetic characters or only numeric characters. However, this adds to the problem of garbage collection because more string manipulations are necessary, and also reduces the overall speed of the routines. Normally I check for invalid input after returning from the subroutine.

Invalid input is a major problem for programmers, of course. Even if the parts of a program that manipulate data are 100% bug free, the wrong data being fed into the program can ruin the results. GIGO, garbage in, garbage out, is an old saying in the data processing world, and it is just as valid today as it was twenty or so years ago when it was first coined. Unfortunately, "garbage in" is all too frequent of an occurrence. To paraphrase Murphy, if a user can do anything wrong, he will.



Equally unfortunately, even if your program is 100% bug free, guess who is going to get blamed if the user types in invalid information and the output is incorrect, or if the system crashes because of something the user did wrong? Right. The programmer.

No matter how well your program prompts the user, no matter how well written your program's documentation may be, users will persist in typing in the wrong data, pressing the wrong keys, putting the wrong disks in the drive and generally making a mess of things. And if we want to sell programs, we have to do everything we can to keep that from happening.

There are two basic types of errors; system errors and data errors. System errors are conditions that will cause a program to crash; printer not on-line, I/O errors, a required file not on a disk, etc. (I don't mean errors such as syntax errors. These are programmer errors that should have been weeded out earlier.)

Data errors are errors caused by inputting bad data, such as putting a decimal point in the wrong place, putting an alphabetic character in a numeric field, etc. While these situations will not cause the program to crash, they can result in something almost as bad, invalid output. Garbage in, garbage out.

How to check data entered by a user for validity is a fairly simple procedure, and has been dealt with often, so let's look at an error condition that is not difficult to handle, but which hasn't been discussed very frequently.

Many of the programs I've written are designed to store, retrieve and manipulate data stored in disk files. During program operation it is often necessary for the user to remove a program disk or data disk from a drive and insert another disk, and anytime disk swapping is necessary, all kinds of problems can turn up. The most frequent one being the user putting in the wrong disk.

If a program attempts to open a file that does not exist on a disk, the program will crash. On the Coco 3, the ON ERR GOTO function can be used to guard against this. ON ERR is described fairly well in the Coco 3's manual, so I won't discuss it here. But what about the Coco I/II? It doesn't have the benefit of a built in error trapping function.

What we need is a subroutine that checks the directory of a disk for a particular file name. If the file is present, we know the right disk is in the drive and the program can continue. If not, then the program has to display an error message telling the user the wrong disk is in the drive.

The Disk System Owners Manual gives a hint of what is needed in the Technical Information section. It lists a simple program that reads the directory of a disk, looking for a specific file name. Unfortunately, this routine is very slow. Not only can this routine be speeded up

enormously, but it can also be squeezed down into a single line of code which will work on either the Coco I/II or Coco 3:

```
100 FE=0: FOR L=3 TO 11:DSKI$ DI
,17,L,L1$,L2$:IF INSTR (L2$, FI$
) OR INSTR (L1$, FI$) THEN FE=1:
L=12: NEXT: RETURN ELSE NEXT: R
ETURN
```

To use this routine, set FI\$ to the name of the file you wish to look for. Do NOT include an extension, only the first part of the file name. For example, if you were looking for a file called ADDRESS.DAT, you would set FI\$ to: FI\$="ADDRESS".

Set DI to the number of the drive you wish to check. For drive 0 this would be DI=0. Then do a GOSUB 100 (or whatever line number you decide to give this routine). After returning, the variable FE will be set to 1 if the file is on the disk, or 0 if the file is not on the disk. If the file is not present, your program can display an error message telling the user to put the right disk in the drive.

What this routine does is simple. The directory is stored on track 17 of the disk, in sectors 3 through 11. The DSKI\$ function reads the specified track and sector. The track is set at 17, the sector to be read is controlled by the L variable in the FOR/NEXT loop. The actual data read is stored in two variables, L1\$ and L2\$. The two INSTR statements tell us if the file name, FI\$, is contained in either L1\$ or L2\$. If it is, FE is set to 1 and the loop is ended by setting L to 12. If not, the loop continues normally until the entire directory has been checked.

This routine is much faster than the one presented in the disk owners manual. Of course, if the user puts an unformatted disk in the drive, or no disk at all, an I/O error will still be generated. This can be trapped by the ON ERR statement on the Coco 3, but there's nothing you can do about it on the Coco II from BASIC.

That's all for this time. The 9th Power returns in the next issue.

Magazines and the people who write for them cannot exist in a vacuum. We need to hear from our readers so we can present the types of material you want to see. If you have any questions, comments, suggestions or hints or tips you wish to pass along to the readers of Coco Clipboard, please let me know. You can write to me at: Randy Krippner, 1014 W. Hwy 114, Lot 29, Hilbert, WI 54129.

You can also contact me via The Unicorn BBS at (414) 989-2536 or (414) 734-5911. The Unicorn is on-line 24 hours a day at 300, 1200 or 2400 baud.



# Master Basic09

Bill Brady

## The Road Less Travelled by

The road of personal computing seems to me to be deeply scored with ruts. For many of us these ruts soon find our wheels and pull us along the road they follow. This column tells how I switched to follow Robert Frost's "roads less travelled by", and along the way, the things I learned. Perhaps you'll learn something too.

Most of us, even if we were computer professionals on "mainframes", start out as users. Even those blessed to find OS9 early, soon find things that we want our computer to do but that cannot be done directly from the user interface. First we learn to "hack" or "patch" our software. (This is when we learn the evils of ROMS.) Sometimes this works well, but never for long, soon we have patches on patches, new software that won't work with this or that patch...etc.

Then we discover Basic. We begin to do pretty much anything we want.. writing our own Basic programs by the score. Soon we have something good, we show it to someone else,.. someone we look up to... someone who is firmly entrenched in the "rut"... and that person says: "Nice program, really nice, but you should have written it in c". (You say to yourself "what the hey is C?", but you really say), "Why?". (An alternative is: "You should... assembly"). Then you get it: "Basic is for beginners..." and "C is more transportable"; or "assembly is faster...", and, if you buy it, welcome to the rut!

All generalities are false (including this one). But these statements are even more false today than ever. The new generation Basics are faster, better, and more error free than ever. Basic09 is right in there, leading the way.

Basic is a "higher" language. Years ago I interpreted this to mean "useable by lower level programmers". The "lowest" language is binary. (My first program was in binary... written with patch cords.. on a HUGE IBM gray thing that ate punched cards and produced "listings", that were pretty neat manpower reports.)

Assembly is one step above binary, c is somewhere between lower and higher.

Here are some statements and their "truism":  
Assembly is always faster than Basic .. false  
c is always faster than Basic and  
slower than assembly ..... false

c is more transportable than Basic  
or assembly ..... false  
You can't do a lot of things in Basic .. false  
More people can understand a Basic  
program listing ..... true  
Programming time in Basic is less for  
most people ..... true

Notice how all the true statements have a "people" in them? This is because what makes a program "higher" is its ability to interface people to a computer. With binary programming, a person must think binary in order to program the machine. Higher level languages understand things like "IF this happens DO that". What you are really doing, when using a higher level language, is letting the computer do the work of translating human thought on one side to computer thought on the other. Well, like all things that computers do, computers have been getting better at the translation too.

Today we have something else in the personal computer world. These are special programs called operating systems. OS9 is an operating system. (OS9 is also a "true" operating system.. not just a conglomeration of ROM code that goes by that name). An operating system is a traffic cop of our computer, a mass transportation system, a treasury, moving files, running programs, allocating resources.

Now, remember why we started down this road? It was to get our computer to do something that we couldn't get done with the normal "user" interface. Well, if we want our computers to do something for us, why not use the language that is our best translator? Why not Basic?

In the past the answer was: basic understands people well, but the computer don't understand IT! In other words, Basic was a good people interface, but not so good on the other side, talking to the computer.

But hold on, Basic09 doesn't have to talk to the computer anymore! It talks to OS9! OS9 talks to the computer. OS9 was smart to start with, but it has gotten smarter since 1983. All we have to do is improve Basic09's conversation with OS9 and then we can get OS9 to do anything, anyway, and just as fast, as any c or assembly program can or ever will!

You may know that I wrote a terminal program

Continued on page 35



# Basic Help

Bill Bernico

Dear Bill,

I have enjoyed your programs. I am so new to computing that simple things seem like small wonders. I have a question about graphics. In the CoCo 2 manual page 121 there is an example of using XA\$. I typed in:

```
5 PMODE 3,1
10 PCLS
20 SCREEN 1,1
25 A$="BM128,96;C8;U25;R25;D25;L25"
30 DRAW "BM95,50;U25;R25;XA$;D25;L25"
40 GOTO 40
```

When the program gets to XA\$ in line 30, it executes the A\$ in line 25, but it does not return to complete the box in line 30 as it should. Can you tell me why? I included the drawing below to show you what happens.

Philip Torracco  
Utica, New York

Dear Philip,

As written, your program is doing exactly what you tell it to do. First, in line 30 when you added the command DRAW"BM95,50;U25;R25"... you told the computer to start at graphics location 95,50 and DRAW a line that extends up 25 pixels and then goes right another 25 pixels. Next, with XA\$ command, you told the program to execute the value of A\$, which in this case jumps to graphics location 128,96 and DRAWS a box with sides each 25 pixels long. After that, you told it to DRAW down 25 pixels and then left 25 pixels. That's exactly what the program did.

I think you're confusing XA\$ with GOSUB. When you have XA\$ in the middle of a DRAW string, it will not go back to the co-ordinates you were at immediately before the XA\$ was called. It will continue DRAWing where the last DRAW command left off. In this case, you drew a box and then asked it to go down 25 then left 25 pixels.

Technically speaking, using XA\$ is correct, although there is a simpler way to accomplish the same task. Personally, I'd rather use the "concatenate" method. Con- catenate simply means to join together, as in joining several commands to do a series of tasks. The plus (+) sign is the symbol used to represent concatenation. Here's how I would write your sample program:

```
20 PMODE3,1:PCLS:SCREEN 1,1
25 A$="BM128,96C8U25R25D25L25"
30 DRAW"BM95,50U25R25"+A$+"D25L25"
40 GOTO 40
```

Aside from substituting concatenation for XA\$, you may have noticed that I left out all those semi-colons between DRAW commands. Over the years I've learned to conserve as much memory space as possible. The program will work without them and it will save space. You can also combine the PMODE, PCLS and SCREEN commands all on the same line, separated by a colon. These hints won't make any difference on a short program like this one, but when your programming skills improve and you begin to write longer programs of 20-25 thousand bytes and begin to run short on memory, every shortcut helps.

Dear Bill,

I have Elite Word and Elite File. The Elite File manual states that it is a good idea to put both programs on the same disk, but does not say how to do it. It is easy enough to make a backup of either disk, but how do you get the other programs on the disk when they are both BASIC and BINARY files? I only have a single disk drive. The directories on the Elite Word and Elite File disks read as follows:

Elite Word	Elite File
EW/BIN	FILE/BAS
EW/BIN	FILE/BIN
EW/BAS	FILE/BIN

Allen Reynold  
Baraboo, WI

Dear Allen,

Moving your Elite Word files onto your Elite File disk is simple. Follow these steps and you'll have all the files from both disks on one disk:

1. Put your Elite Word Disk and type LOAD"EW" and hit enter.
2. Remove the Elite Word disk and insert the Elite File disk.

Continued on page 46



# CoCo 'N Amateur Radio

Mike Dooley KE4PC

Well, it's that time again! Here we are ready for another installment in the never ending battle for truth, justice and the COCO way! Uhh, sorry folks. The local tv station showed Superman all afternoon and yours truly was there. Enjoyed it all, too. Lessee... where am I... Ah yes!

Hello happy COCO folks! Since we last met I've been busy toying with some new ham software. This interesting piece of software comes from the folks at Spec-Com Software in Lowden, Iowa. It's called COCORADIO. The package is made up of interfaceless communications programs. A list of the programs is below:

---

- Amateur Television (FSTV)
- DX/PREFIX Countries
- Facsimile Transmit/Receive
- Hardcopy Directory Printout
- Morse Code Trainer (CW)
- Oscar Satellite Tracker
- Packet Data Tuner
- Radioteletype Send/Receive
- Slow Scan Television (SSTV)
- Utilities for Ham Radio

---

The price for the software, which comes with samples of SSTV pictures and five different versions of the FAX program, is \$59.95. Considering what you get it's not a bad price. As time allows I'll let you know how I'm doing with the different programs included in this package. At this time I've only tried the SSTV and Radioteletype programs.

The Slow Scan Television program seems to work very well. SSTV people can be found in the 20 meter band around 14.235 MHz. Listen for them around 10 AM and 3 PM Saturday and around 2 PM Sunday (times are Central). They will first talk to each other, letting everyone know what will be transmitted, then the picture is sent.

To receive SSTV images, load and run the SSTV program. Next, tune in the people so you can understand what they're saying. People on 20 meters typically transmit using Upper Sideband. This means the radio you use must be capable of receiving Upper Sideband. It will either have a selection on a knob labeled USB or there must be a BFO knob (beat frequency oscillator). If your radio doesn't have Upper Sideband (USB) or a BFO then you won't be able

to receive the SSTV signal (or understand what they're saying).

The first time I tried the SSTV program I was absolutely amazed! This was my first brush with this mode of operation. I had loaded the SSTV program and had it running on the COCO. I then tuned in the Net (the group of people) and started listening. When one of the operators on the net started sending a picture I looked at the COCO's display and there was a picture being painted on the display! The program takes those funny sounding warbling tones and converts them into a picture! The pictures you receive can be saved on disk for later viewing or, if you've got an Epson printer, they can be printed to show your friends.

The other program I tried out was for sending and receiving Radioteletype. I haven't tried sending yet, but it works very well in the receive mode. RTTY signals are typically found in the lower portion of the Ham bands and they will be operating in Lower Sideband (LSB). Again, as above, your radio must be capable of receiving lower sideband using either a BFO or an LSB selection. When you load and run this program you'll see a "tuning indicator" in the upper right corner of the screen. It looks like this...

MARK--><--SPACE

There will be a black cursor to the left of the 'M' in MARK. Find what sounds like a RTTY signal and watch the black cursor as you tune the radio. It should start jumping back and forth between the sides of the tuning indicator. Tune your radio until the black cursor jumps between the 'K' in MARK and the 'S' in Space. It will probably overlap those letters slightly, but that's OK. You should start seeing words printing on the screen.

In other news, how did you do with the program and Ohms law in the last issue? Really? Since you did so well, let's take another step forward and look at series resistance. In Figure 1 there are two resistors, R1 and R2. Since they're in series with each other the total resistance of the circuit is found by adding them together.

$R1 + R2 = R \text{ total.}$

Here are some problems to try. Figure out what R total is before going on with this article.



# CLEARBROOK SOFTWARE GROUP NEWSLETTER

Welcome to issue 2 of the Clearbrook Software Group Newsletter. In this issue, we will start the development of our AR/GL project.

## CSG IMS Version 2

Version 2.0 of CSG IMS will be released June 1, 1988. It features several enhancements and fixes for some bugs. These include:

- SET INDEX TO <directory> statement to allow the index file (.iin) to be in a different directory than the data file (.ida). It also lets you place the index on a RAM disk, speeding up file operations by three times.
- Temporary output redirection during interactive file queries. With any statement which uses a range clause, you can add TO <path> at the end. All of the output from that command will then be directed to that path. For example: IMS:LIST PRINT NAME, PHONE TO /P
- PUT statement to write binary data to the screen or alternate print path. This is useful for special screen and printer control.
- GET statement to read binary data from the keyboard or alternate input path. The inverse of the PUT statement.
- A new manual is available for version 2 of CSG IMS. It incorporates the two previous manuals and documents the additional features.

### HOW TO ORDER YOUR UPDATE

To order, send your original disk and a check, money order, VISA or MC for \$5 to cover shipping and handling to the address listed below.

If you want the new manual, please add \$15.

## AR/GL PROJECT

One of the best ways to learn a new computer language or development system is to observe a typical application being designed. Accounts Receivable and General Ledger are among the more common uses of computers and will be a good example for our purposes.

### DEFINING GOALS

**What do we want the AR and GL application to do?**

#### AR

- Keep track of customers.
- Keep track of customer transactions.
- Update the General Ledger.
- Print statements, balance sheet, activity report, customer list and mailing labels.

#### GL

- Keep track of ledger accounts.
- Maintain ledger transactions.
- Print reports.

### What method do we use to update the General Ledger?

Two methods can be used to update the general ledger, direct entry and posting.

With direct entry, the ledger balance is updated when a transactions is entered. The advantage with this method is the the GL is up to date at all times. The disadvantage is that if errors occur they are harder to find.

With posting, transactions are collected in a file until they are checked for correctness and balanced. Then they are posted to update the ledger balances. This method gives you better control of the information going into the ledger.

We will choose direct entry for this exercise.

### How will the database files be organized?

- Customer file - customer code, name and address, terms and balances
- AR transaction file - customer code and transaction detail
- GL account file - account code, name, type and balances
- GL transaction file - account code and transaction detail

### DEFINING THE FILES

We will now define the data files and keys. An arbitrary number will be chosen for the initial sizes of all of the files. Create a text file called ARGL.ide with the following information:

NOTE description of the files used for the AR and GL application

NOTE the customer file  
FILE ARcust OF 50

```
INTEGER ARcode : NOTE customer number
TEXT ARcust OF 30 : NOTE customer name
TEXT ARaddr(3) OF 30
TEXT ARzip OF 9
TEXT ARcontact OF 15 : NOTE name of
    contact
TEXT ARhphone OF 10 MASK "(###)###-####"
TEXT ARwphone OF 10 MASK "(###)###-####"
INTEGER ARterms : NOTE terms in days
DATE ARstart : NOTE date customer
    account opened
REAL ARbal MASK "###^,###.###" : NOTE
    current account balance
```

```
KEY INTEGER ARcode = ARcode
KEY TEXT ARcust OF 30 = ARcust
```



KEY TEXT ARsound OF 4 = SOUND\$(ARcust)

NOTE the customer transaction file  
FILE ARtrans OF 100

INTEGER ARTcode : NOTE customer code  
TEXT ARTtype OF 1 MASK "L" : NOTE  
transaction type (Credit or Debit)  
TEXT ARTref OF 10 : NOTE reference -  
invoice # or receipt #  
TEXT ARTdesc OF 30 : NOTE description  
of transaction  
DATE ARTdate  
REAL ARTamount MAST "###^,###.##"

KEY INTEGER ARTcode = ARTcode

NOTE the GL accounts file and company  
information  
FILE GLaccount OF 100

HEADER TEXT company OF 40 : NOTE  
company name  
HEADER TEXT address(3) OF 30 : NOTE and  
address  
HEADER TEXT phone OF 10 MASK  
" (###) ###-####"  
HEADER TEXT fax OF 10 MASK  
" (###) ###-####"  
HEADER TEXT telex OF 10 MASK  
" (###) ###-####"

INTEGER GLacc MASK "####" : NOTE  
account number  
TEXT GLname OF 30  
REAL GLbal(13) MASK "###^,###.##" :  
NOTE balance forward and for each  
month

KEY INTEGER GLacc = GLacc

NOTE GL transaction file  
FILE GLtrans OF 200

INTEGER GLTcode MASK "####" : NOTE GL  
account  
TEXT GLTdesc OF 24 : NOTE description  
of transaction  
DATE GLTdate  
REAL GLTamount MASK "###^,###.##"  
  
KEY LONG GLTcode\_date = (GLTcode MASK  
"####") + (GLTdate MASK "YND")

When the above file descriptions have been entered and  
saved, use the IMSD program or selection 2 of the IMS menu  
to create the data files.

## NEXT ISSUE

In the next newsletter, we will set up some screen forms to  
maintain the customer and GL files.

# SERINA

In the last newsletter I introduced you to a user mode debug-  
ger for OS9 named ERINA. OS9 strictly separates user and  
system state so a special debugger is required to debug system  
programs.

If you are developing device drivers or file managers you  
have probably had many frustrations trying to find bugs. Bugs  
in system modules can crash the system very easily. It is hard  
to identify which section of code is faulty because you have to  
reset the computer, modify the program and try again. With  
SERINA, you can watch the execution of each instruction and  
spot when a register has an incorrect value or the wrong branch  
is being taken.

SERINA is the system mode companion to ERINA. They  
have many operational characteristics in common so it is easy  
to switch between them without relearning. In addition to the  
standard memory examine, change and fill, you get a built in  
assembler and disassembler. Breakpoints can be set at the  
beginning of a section of code to automatically wake up the  
debugger.

The most powerful feature is the execution tracer. While  
tracing, the registers and mnemonic for each instruction will  
be displayed.

## HOW SERINA WORKS

Because SERINA is designed to debug system programs,  
it must itself reside in system space. To achieve this, SERINA  
is comprised of a user module, a device driver, a device  
descriptor and an IO module. The actual debugger resides in  
the device driver so that the system memory map is resident  
while debugging.

The IO module does SERINA's input and output. It con-  
tains subroutines called by the device descriptor to perform IO  
through a serial interface chip (in the ACIAPAK of the  
COCO3). The IO module may also contain a subroutine to out-  
put to a printer (the bit banger port on the COCO3).

When the debugger is active, all system task switching is  
suspended because interrupts are not serviced while a process  
is running in system state. Normal task switching resumes  
when SERINA is suspended.

After SERINA is initially activated, you can set break-  
points in the code being debugged. You then exit, and run some  
user mode programs which will cause the system to execute  
the code in question. When a breakpoint is encountered,  
SERINA will wake up and take control.

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from Tandy Corp

June 11th.

July 9 th.

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# Quick Forecasting

Jim DeStafeno

## Quick Forecasting, The Derived Method

Sandra was saying to Younger, "So we are going to the rally together after school?" "Yea, it should be..." "Hello, you guys got a minute?" Younger was interrupted by Mr. Teachit. He had helped them design their inventory usage forecasting formula to be used in Younger's dad's business.

"Ah, yea... Oh Hi Mr. Teachit... sure sit down?" "I've just got a minute. I have arranged a meeting for you at the college with a business Management professor, Professor Wasthair... tell Rubin too... If your parents say it's okay I can take you there Monday after school." "Oh, why is that?" "I told him about your forecasting formula. He said he would like to meet you." "Oh Wow, O.K.!"

\* \* \* \*

During the drive to the college, Mr. Teachit explained to the three of them Professor Wasthair not only teaches at Smartville Community College, but also at State U.; (Mr. Teachit is working on his Phd at State.) that he had given a guest lecture on the practical applications of mathematics to one of Mr. Teachit's classes, that he had told the professor about their work, and the professor had asked to meet them.

"So you are interested in inventory management." "Yes sir." "Charles, Uhh... Mr. Teachit showed me your forecasting formula. Who is the math major in this group?" Sandra and Younger looked at Rubin. "Oh I like math, but I'm going for Economics." "Oh, State U.?" "Well I've applied there too." "I see, how about you two?" Younger, looking at Sandra said, "I've applied to State and here at SCC too; two others too" "And what about you Sandra?"

"Well, I'm not sure yet." "You're not sure where, or not sure if?" "Well, ah... where." "You are going to college aren't you?" "Well yes, I guess so; my Dad wants me to." "Okay, well if you're not sure, SCC would be a good place to start."

We would like to see you all here or at State next year." Sandra was looking at Younger, "I'm just a Junior." "Oh, I see, well year after next for you."

"I'm so glad you were able to come this evening. I wanted to talk to you about your formula. It is very good, but it does require a

long time to compute each item. As I'm sure you know, time costs a business money."

"As I understand it, you are running every item in your inventory through your formula." "Yes, that is true. It would take about twelve hours to do all my Dad's parts." "Yes Younger, that is just what I am talking about. Of course you don't do all of the items every time, but twelve hours is just too long."

"Are you using EOQ or ABC?" The three just looked at each other. "Okay, I see that you are not. This is what I suggest, would like you to do. I have a forecast calculation method that runs much faster than yours, and requires only the last period's usage, rather than the many months yours does. However, it is not as accurate as yours in all cases."

It is the result of using a formula like yours for many years, observing the results and setting guidelines to match the result of the more complex formula. I would like you to use it and compare its forecast with the one your formula suggests, and of course with the actual usage."

"Humm... you've got the cart a bit before the horse, it would be better if you had an ABC...; well we must be practical, it'll work out. Ahh... you should find many items in your inventory that can be done with it." He handed a single sheet of paper to Younger, saying, "This will save a lot of time. Okay, come back in a couple of months with a report and we'll talk about ABC and then we'll be ready to talk about EOQ; look them up before you come. I must go now, thank you." He collected himself and left the office before they could even get up.

## - DERIVED FORECASTING METHOD -

Professor Wasthair's formula, lets call it the "Derived Method", is the last in this series of forecasting formula discussions. Any reputable formula in use today is a derivative of one or more of the four formulas we have discussed in the series. The Derived Method is not really self supporting, but rather is the result of observing how "real" forecasting formulas react to given situations. Using a different correction factor for each situation group, yields a similar result as using a "real" forecasting formula.

The Derived Method has two main advantages over the Exponential Smoothing formula discussed last time. The Professor spoke about



speed and its need for only a small amount of history. The Smoothing formula is as good as can be had, but it requires at least 24 periods, two years, of past demand history, and doesn't fine tune until has 36 periods, and uses a lot more disk space.

Since the Derived Method uses only one period of usage, the user must know what Usage Group the part belongs to. If the demand history is not known, one can still get a pretty good forecast; the Usage Group can be an educated guess. All this means the formula can be used in two cases, one where the history isn't known and also where accuracy is less important than speed.

Often the Exponential Smoothing and Derived Method formulas are used together; the Smoothing for the critical year's highest total dollar sold (used) parts, and the Derived for all the others. (This distinction will become clearer when we discuss ABC analysis.)

While the Derived Method does include a simple correction element, it has none of the sophistication of the Smoothing formula. In addition, the error factor is often greater than that of the Smoothing formula. This causes safety stock to be greater, and thereby increases inventory investment.

Even considering these limiting factors, when used in the proper situation the formula does have value and can be the best way to forecasting inventory usage. The logic behind determining which correction factor to use is based on the assumption that the more periods that are used in a forecast calculation, the less the forecast will be affected by the last period's usage. Once one accepts the logic the rest follows easily. The "rest" says, the less restrictive the formula the better. If the part usage is volatile a calculation that allows for volatility should be used. Something like the equivalent of 3 or 6 periods. While if a part's usage history is very stable, 18 to 24 periods should be used to keep the last period's usage from affecting the forecast strongly. But if the demand has had "normal" variations in usage, the usage is normal and 9 or 12 periods should be used.

The formula emulates a normal formula, but it requires an educated estimate of what type usage the item will have, and where possible, that is best obtained by looking at its past usage. However, if the history is not available, one can just estimate the expected usage type and reevaluate the usage when usage history has been accumulated. So all we have to do is plug in the last period's usage and the estimated usage type and a reasonable forecast will be generated.

How does one know what usage type, correction factor, to use with a given part? If you have been thinking the base logic is a little shaky, the answer is a kin to an earthquake. One just picks one of the factors that seems to fit the part's usage history.

#### DEMAND PATTERN TO CORRECTION FACTOR:

Volatile.....	3 periods = .50
Volatile Moderately.	6 periods = .28
Normal Unstable.....	9 periods = .20

Normal Stable.....	12 periods = .15
Stable Shaky.....	18 periods = .11
Stable.....	24 periods = .08

Formula is not to be used when there are many periods of zero usage.

Again the correction factor is not a calculated result, but rather a result of observation and trial and error - empirical values.

The formula is simply:

$FC = (CV \times PD) + ((1.0 - CV) \times PF)$  where,

CV=Correction Factor Variable  
PD=Last Period's Demand  
PF=Last Period's Forecast  
FC=Forecast

#### - IMPLEMENTATION -

All that is needed is a simple data base. A record for each part number and fields for the correction factor and Last Period's Forecast. However, retaining at least 12 periods of the part's demand history is recommended.

The history can be used to view the demand to determine the proper variable value and to use in other report calculations. Also keep in mind the Exponential Smoothing formula wants 36 periods.

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To keep from reinventing the wheel, this formula can be inserted in the data base published in the last CoCo Clipboard with the Exponential Smoothing article, or a commercial data base such as Workbase used by Rush Caley in his data base article in this issue can be used or contact Ed Gresick of "The Dream Machine" fame (See COCO CLIPBOARD '87 Nov/Dec issue) for a complete CoCo inventory module, as well as other business modules.

There are two important points to keep in mind when forecasting demand, be it with this formula or most any other. The first revolves around an unusual high usage situation, a pike. If a "pike" occurs the forecast for the next period will be abnormal high.

This can be cared for by limiting the given period's usage used in the formula to something like two times the average usage. On the other hand you may not want to set such a limit because it is a seasonal item. The Smoothing method cares for this automatically.

The other point is a bit more subtle. Note that consumption has been stated as usage. The quantity sold is not necessarily the true demand. Sales quantity does not take into account substitutions. The usage of the substituted item is increased, while the correct item shows no usage for the demand. Nor does it take into account a totally lost sale because the item was not in stock and the customer got it somewhere else.

In addition, usage can be allocated to the wrong period if a part is out of stock at the time of demand, but the customer does wait until the part comes in, the item is issued in the period after the true demand period. All of these things should be "corrected" to allow proper calculation.

#### - COMPARISON TABLE -

See Table 1 to compare the forecasts of the Derived Method to the Exponential Smoothing Method for the same parts.

Two parts with 36 periods of usage history each were run through both formulas. Part A appeared to have normal to stable usage, while part B is obviously highly volatile and very seasonal. Table 1 compares the results of both formulas. All six possible CV values of the Derived Method are shown.

The absolute value of the sum of the forecasted errors is a good measuring stick for comparing forecasting formulas. Note that Part A shows little difference between the two methods; 3.8 vs 2.7 at .11 CV, correction factor.

The maximum negative quantity for any period, quantity short of true usage, is important because it is the main determinant for safety stock. That quantity has to be kept as low as possible to keep inventory investment as low as possible. In this we see a difference of 15 vs 10.

The sum of all quantities for all 36 periods in excess of usage is significant because it shows how many extra items not used in the forecasted period, were purchased. That increases inventory value unnecessarily. In this case we see 87 vs 84.

Note that we wouldn't have gone wrong if we had chosen to use the .08 or the .15 value. However, the real point is there isn't much difference between either formula when the correct CV is used in the Derived formula.

However, if we look at the highly volatile Part B in the same way, we see that Exponential Smoothing formula does a much better job. Therefore it isn't hard to conclude that the Smoothing formula should be used with volatile parts and high investment parts, all others can take advantage of the speed of the Derived method. And only the Derived method can be used when there is less than 24 periods of history.

Sandra and Younger whipped up the Derived Forecasting Method evaluation program in jiffy. However, she had fun trying to make it bullet proof and fast. I'll point her tricks out as we go along. It was written on a CoCo-3 in reverse video, but in the 32 column mode, so it runs fine on a CoCo-2 and normal video. However, to get the full effect of the low resolution graphics on the -2, the CHR\$(nnn)s must be reversed.

#### - PROGRAM OPERATION -

It first asks for a Part Number. It is displayed just for reference. If you don't need to see it just step-thru by pressing the ENTER key. Note that the number of periods between the cursor and the Less Than symbol denote the number of character spaces allowed for the input values.

<<< TABLE 1 >>> (From a 3 yr usage history)

A - Sum of all forecast errors.

B - Maximum single negative forecast error.

C - Sum of all forecast quantities in excess of usage.

	.50	.28	.20	.15	.11	.08	..	Exp Sm
PART A: (Stable)								
A	7.2	6.5	5.4	4.1	3.8	4.2		2.7
B	18	18	17	16	15	15		10
C	96	90	88	88	87	86		84
PART B: (Volatile)								
A	2490	4126	5260	6429	7977	9880		35.0
B	1344	1331	1327	1318	1276	1206		285
C	11007	13290	14480	15392	16473	17814		1858



To get the cursor to the left of the displayed characters spaces is a little tricky, but proper use of the semicolon and print @ command get the job done. The beginning of line 30 is a good example.

Next you are asked for the part's forecast. For me, having the forecast coming before the demand is for some reason a bit of a mind twister, but if I think about it, it is correct. That is, in the normal course of things first the part's usage is forecasted and then the usage occurs.

On all passes after the first, the previous forecast calculated is displayed and at the bottom of the screen you are asked if you want to use or change it.

Of course this must be a numeric only input. Sandra could have used INPUT and a nonSTRING\$ variable, but she choose LINEINPUT and then checked the character values with ASC. Its not a perfect trap, but check it out. Put in some numbers and then a letter and see what BASIC does. If you need that result sometime it is a neat way to get it. The last part of line 30 is where this occurs. Next the Demand is requested. It is not step-thru and accepts only numeric values.

Finally the correction factor for the forecast is requested. The input value is a letter, while the desired value is a decimal. This reduces mis-keying due to confusion between the number of months and the factor number. This request is also step-thru, changeable.

#### - PROGRAM HINTS -

Some of the program "tricks" that may of interest include right justification of text. Sandra uses a fast and short method, the alternative usage of MID\$; see line 220. This method also has the added plus of not adding blanks, spaces, to the variable value; check it out.

She "right" justified numerals using PRINT USING in combination with PRINT@. Getting that straight is a little tricky; see line 290.

Of course the harped on use of INKEY\$ without the following "mandatory" IF/GOTO was used. Check out line 410 for one method and line 280 for another. This last line is even more interesting because it also produces a blinking cursor.

Lastly, the border around the display causes the use of more PRINT@s and CHR\$(n)s then would be needed without it, but Sandra says, "You just got'a smell the flowers some times."

#### - SUMMATION -

The value of the Derived Forecasting Method is its need for only the usage and forecast from the last period; its calculation speed and comparability little disk space. It will yield reasonable results for most all inventory items. On the negative side, the more volatile the usage the less accurate the forecast is, over all it is less accurate then the Exponential Smoothing method and it requires an "educated guess" to set the "forecast correction factor".

If you have any questions please write to the address at the end of the program; Younger and Sandra have a lot of studying to catch up on.

Since order quantity not only includes the forecasted usage quantity, but also the safety stock and lead time quantities, we can expect Younger to be asked to look at that calculation method next time.

(Editors note: This listing is in a 32 column format)

```

0 ' *****
1 ' * --- "QUIKfest" --- *
2 ' * DERIVED METHOD OF *
3 ' * FORECASTING *
4 ' * ----- *
5 ' * SETUP FOR COCO-3 *
6 ' *****
7 '
8 PALETTE12,63:PALETTE13,0:CLS5'
*** DELETE THIS LINE FOR COCO-2
USE ***
9 '***
10 '*** prog. dir. & subr'ts ***

11 '***
20 CLS5:GOSUB510:GOTO110'*** get
screen border ***
30 PRINT@X,STRING$(8,".");"<";:P
RINT@X,"";:LINEINPUT X$:PRINT@X+
9,CHR$(197);:IF LEN(X$)>8 OR X$=
"" THEN30 ELSE IF ASC(X$)<48 OR
ASC(X$)>57 THEN30
40 Y=VAL(X$):PRINT@X,USING"####
###";Y;:RETURN
50 PRINT@449,STRING$(2,207)"<ENT
ER>=CON'T/<S-B>=CHANGE"STRING$(2
,207);:RETURN
60 PRINT@449,STRING$(30," ");:RE
TURN
99 ' ***
100 '*** screen display ***
101 '***
110 PRINT@65,"- P/N";:PRINT@97,"
- LAST PERIOD'S";:PRINT@132,"FO
RECAST";:PRINT@164,"DEMAND";
120 PRINT@193,"- CHOOSE VARIABLE
VALUE";:PRINT@228,"A) 3 PERIO
DS = .50";:PRINT@260,"B) 6 PERI
ODS = .28";:PRINT@292,"C) 9 PER
IODS = .20";:PRINT@324,"D) 12 PE
RIODS = .15";:PRINT@356,"E) 18 P
ERIODS = .11";:PRINT@388,"F) 24
PERIODS = .08";
130 GOTO210
140 FOR X=225 TO 417 STEP32:PRIN
T@X,STRING$(30," ");:NEXT:SW=0:P
RINT@257,"- FORECAST";:PRINT@29
2,"CURRENT PER'D";:PRINT@324,"CU
RRENT PER'D +1";:PRINT@356,"CURR
ENT PER'D +2";:GOTO310
199 '***

```



```

200 '*** input data ***
201 '***
210 PRINT@79,STRING$(15,".");"<"
;:PRINT@79,"";:LINEINPUT PN$:PRI
NT@95,CHR$(197);:IF LEN(PN$)>15
THEN210 ELSE IF PN$="" THEN PN$=
""
200 '*** input data ***
201 '***
210 PRINT@79,STRING$(15,".");"<"
;:PRINT@79,"";:LINEINPUT PN$:PRI
NT@95,CHR$(197);:IF LEN(PN$)>15
THEN210 ELSE IF PN$="" THEN PN$=
""
220 A$=STRING$(15," ");:MID$(A$,1
6-LEN(PN$),15)=PN$:PRINT@79,A$;
230 X=150:IF FC>0 THEN GOSUB50:X
$=STR$(FC):GOSUB40:EXEC44539:GOS
UB60:X$=INKEY$:IF X$=CHR$(13) TH
EN250 ELSE IF X$<>" " THEN230 EL
SE GOSUB30:PF=Y:GOTO250
240 GOSUB30:PF=Y
250 X=182:GOSUB30:PD=Y
260 IF CV>0 THEN290
270 PRINT@417,"CHOOSE A,B,C,D,E,
OR F.....<";
280 SW=1:PRINT@445,CHR$(207);:ON
INSTR("ABCDEFG",INKEY$) GOTO287
,281,282,283,284,285,286:GOTO287
281 CV=.5:GOTO290
282 CV=.28:GOTO290
283 CV=.2:GOTO290
284 CV=.15:GOTO290
285 CV=.11:GOTO290
286 CV=.08:GOTO290
287 PRINT@445," ";:GOTO280
290 PRINT@216," ";:PRINT@219,USI
NG".##";CV;:IF SW=1 THEN140 ELSE
GOSUB50:EXEC44539:X$=INKEY$:GOS
UB60:IF X$=CHR$(13) THEN140 ELSE
IF X$="" THEN270 ELSE290
299 '***
300 '*** forecast calculation an
d screen print ***
301 '***
310 X=308:GOSUB340
320 X=X+32:PD=FC:PF=FC:GOSUB340
330 X=X+32:PD=FC:PF=FC:GOSUB340:
GOTO410
340 FC=(CV*PD)+((1-CV)*PF):PRINT
@X,USING"#####.##";FC;:RETURN
399 '***
400 '*** end of program ***
401 '***
410 PRINT@421,"- AGAIN OR QUIT (
A/Q) ? ";CHR$(207);:EXEC44539:IF
INKEY$="Q" THEN CLS:END ELSE20
420 EXEC44539
499 '***
500 '*** print screen boarder **
501 '***

```

```

510 PRINT@0," ";STRING$(7,CHR$(1
95));"derived";CHR$(207);"foreca
st";STRING$(7,CHR$(195));
520 FOR X=32 TO 448STEP32:PRINT@
X,CHR$(202):PRINT@X+31,CHR$(197)
;:NEXT
530 PRINT@480," ";STRING$(4,CHR$
(204));"chatham";CHR$(207);"hous
e";CHR$(207);"software";STRING$(
4,CHR$(204));:RETURN
600 '
601 '*****
602 '* COPYRIGHT (C) 1987 *
603 '* CHATHAM HOUSE SOFTWARE *
604 '* RD1, BOX 375 *
605 '* WYOMING, DE 19934 *
606 '* (302) 492-8511 *
607 '*****
1000 SAVE"QUIKfcst:0":PRINT"-ok-
":EXEC44539
1010 SAVE"QUIKfcst:1":STOP

```

#### Great Stuff for your CoCo3

##### DS-9 Disk Mailing List (DML9)

Our MOST powerful program ever! Using a unique system of indexes and linked lists, access to any record is nearly instantaneous--and since records are inserted into the list as they are added you never need to sort the file. Records are maintained in alphabetical order as well as by zip code. Each record has fields for name, address and phone number as well as a memo field, the date the record was added to the list and the date the record was last printed. You have COMPLETE control over how the output will be formatted. Matches can be easily specified--list all those people whose first name starts with "C" and live in NY, etc. Stores approx. 1800 names on a DS-40 track floppy, more on larger media. Special merge option lets you convert existing files.

512K DS-9 Level 2 \$24.95

##### CoCo 3 Cribbage

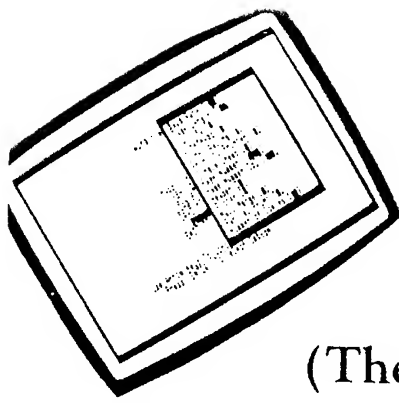
Written to explore the graphics capabilities of the CoCo 3, this program plays a super hand of the classic card game. Comes with a FULLY COMMENTED listing you can list, examine and modify. Learn how to use CoCo 3 graphics and "artificial intelligence" algorithms. This is a great card game simulation which'll keep you going for hours.

128K RS-DOS Disk \$13.95

Sorry, no credit cards--enclose check or money order plus \$2.00 shipping and handling. Complete catalogue available--send \$1.00.

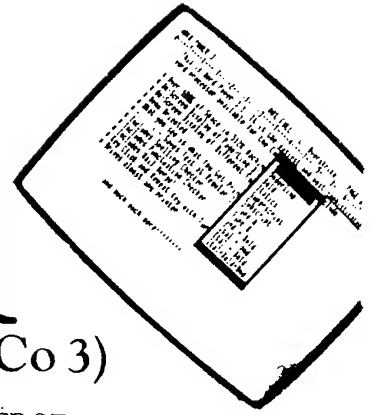
Bob van der Poel Software  
17435-57 Avenue  
Edmonton, Alberta  
Canada T6M 1E1





# Word Power 3.1

(The Ultimate Word Processor for the CoCo 3)



**Power Unleashed!** Unlike other word-processors, Word Power 3.1 is written from scratch for the CoCo3. It bridges the gap between "what is" and "what should be" in word-processors. No other word processor offers such a wide array of features that are so easy to learn and use.

## DISPLAY

The 80-column display with true lowercase lets you view the full width of a standard page. All prompts are displayed in plain English in neat colored windows (see display above). The current column number, line number, page number and percentage of free memory is displayed on the screen at all times. The program even displays the bottom margin perforation so you know where one page ends and the other begins. You can also change foreground/background color of screen and select menu and carriage return colors to suit your needs! Carriage returns can be visible or invisible. Word Power 3.1 runs at double clock speed and can be used with RGB/composite/monochrome monitors as well as TV.

## AVAILABLE MEMORY

No other word processor gives you so much memory. Word Power 3.1 gives you over 72K on a 128K machine and over 450K on a 512K machine to store text.

## EDITING FEATURES

Word Power 3.1 has one of the most powerful and user-friendly full-screen editors with word-wrap. All you do is type. Word Power 3.1 takes care of the text arrangement. It even has a built-in Auto-Save feature which saves the current text to disk at regular intervals; so you know that your latest version is saved to disk. Here are some of the impressive editing features of Word Power 3.1:

Insert/Overstrike Mode (Cursor style changes to indicate mode); OOPS recall during delete; Type-ahead buffer for fast typers; Key-repeat (adjustable) and Key-click; Four-way cursor control and scrolling; Cursor to beginning of text, end of text, beginning of line, end of line, top/bottom of screen, next/previous word; Page up/down; Delete character, previous/next word, beginning/end of line, complete line, text before and after cursor; Locate/Replace with wild-card search with auto/manual replace; Block Mark, Unmark, Copy, Move and Delete; Line Positioning (Left/Center/Right); Set/Reset 120 programmable tab stops; Word count. Define left, right, top and bottom margins and page length. You can also highlight text (underline— with on-screen underlining, bold, italics, superscripts, etc). Word Power 3.1 even has a HELP screen which can be accessed any time during edit.

## MAIL-MERGE

Ever try mailing out the same letter to 50 different people or sending out several resumes? Could be quite a chore. Not with Word Power 3.1. Using this feature, you can type a letter, follow it with a list of addresses and have Word Power 3.1 print out personalized letters. It's that easy!

## SAVING/LOADING TEXT

Word Power 3.1 creates ASCII format files which are compatible with almost all terminal, spell-checking and other word-processing programs. It allows you to load, save, append and kill files and also to create and edit Basic, Pascal, C and Assembly files. You can select files by simply cursoring through the disk directory. Supports double-sided drives and various step rates.

## PRINTING

Word Power 3.1 drives almost any printer (DMP series, EPSON, GEMINI, OKIDATA, etc). Allows print options such as baud rates, line spacing, page pause, partial print, page numbers, page number placement, linefeed option, multi-line headers/footers, right justification and number of copies (see display above). The values for these parameters and the margins can be changed anytime in the text by embedding Printer Option Codes. Word Power 3.1 has the **WHAT YOU SEE IS WHAT YOU GET** feature which allows you to preview the text on the screen as it will appear in print. You can see margins, page breaks, justification and more.

## SPELLING CHECKER

Word Power 3.1 comes with a 50,000 word spelling checker/dictionary which finds and corrects mistakes within your text. You can add words to or delete from the dictionary or create a dictionary of your own.

## PUNCTUATION CHECKER

This checker will proofread your text for punctuation errors such as capitalization, spaces after periods/commas, double words and much more. It's the perfect addition to any word processor.

## DOCUMENTATION

Writing with Word Power 3.1 is a breeze. Word Power 3.1 comes with a well-written, easy-to-comprehend instruction manual which will lead you step-by-step through the program.

Word Power 3.1 comes on an UNPROTECTED disk and is compatible with RS DOS 1.0/1.1 and ADOS. Only \$79.95.

(Word Power 3 owners can get the 3.1 version by sending proof of purchase and \$10.00 to cover the cost of shipping and the manual.)



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Continued from page 23

Problem 1 - R1=47 ohms  
R2=150 ohms  
-----  
Rt=?  
  
Problem 2 - R1=1000 ohms  
R2=2300 ohms  
-----  
Rt=?  
  
Problem 3 - R1=97 ohms  
R2=10000 ohms  
-----  
Rt=?

The answers can be found elsewhere in this issue. Next, use the Ohms law formula you learned last time to figure out what the current in the circuit is for each above problem.

Problem 1 - I total=?

Problem 2 - I total=?

Problem 3 - I total=?

The answers for these problems are also hidden elsewhere in this magazine. In the answers I rounded my values so you may have more numbers than me, but they should be close.

Once we know the current through a circuit we can figure the voltage drop across each resistor. Let's try it on the first circuit.

The current is .05 amps. R1 is 47 ohms. Using Ohms law we calculate the voltage dropped across R1 as being 2.35 volts.

Next, calculate the drop across R2. You should come up with about 7.5 volts. Add the two voltages together. It comes to 9.85 volts. That's almost what the battery is! Why is it slightly less? Because I rounded the current (amp) value in my example.

If you use the entire value it should be much closer. Why don't you try calculating the voltage drop across R1 and R2 in the second and third example? Again, The answers are elsewhere in this issue.

We've learned two things here. First, the total resistance of a circuit can be found by adding all series resistances together (R1 + R2 + R3 etc.). Second, the total voltage drop of a circuit (adding the voltages dropped across each resistor together) should be equal to the total applied voltage.

Want to try these for yourself? Go to Radio Shack and purchase a Volt Ohm meter, some resistors and a 9 volt battery. Some clip leads (alligator leads) might be handy, too. Use the clip leads to build the circuit in Figure 1. Insert different values for R1 and R2. Calculate the following from your circuit:

R total =

I (amps) =

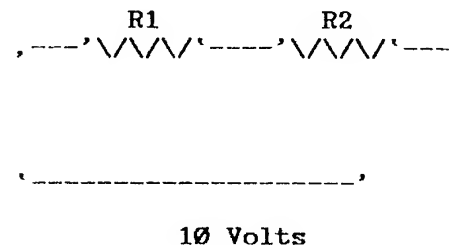
ER1 (voltage drop across R1) =

ER2 (voltage drop across R2) =

ER total (total voltage drop) =

Once you've made your calculations, measure the values with the volt ohm meter and see how close you are. Good Luck and see ya' next time! 73's de mike dooley ke4pc

Figure 1



Continued from page 7

This is a ROM pak game of arcade quality graphics. And although we don't do a lot of game reviews this is one that will keep your kids (maybe even you) happily playing away AFTER the serious work on the CoCo is done.

This is also letter month. As you can see from the front cover by artist Jim Bennet (E.Z. Friendly Software) our mail box has been jammed these past two months. We've tried to print as many as possible and to the many of you who have written, and whose letter didn't appear this issue - our thanks for your encouragement.

This is also the last time I'll be able to mention our programming contest. Based on a program appearing in our 3rd issue, the contest has had NO responses! We've got some great prizes, including a free subscription or renewal, an 80 column printer stand and software. The contest is for the CoCo 3 and the deadline of June 1st is coming fast. Back copies of issue #3 are still available, check the back issue information page in this issue.

Darlene and I will be taking Clipboard on the road during May. May 7th will find us at the National Guard Armory in Erie, PA. That citie's user groups have joined forces to run their own Computer Faire. May 14th will find us in Buffalo at the Hearthstone manner for a Computer Swap show. If you've got a computer show in your area, and are within 300 - 500 miles of Fredonia please call us with the details. Fredonia is in Western New York State, 45 mile southwest of Buffalo on Lake Erie. We'd also like to visit your next club meeting. Our best days would be Saturdays and again within a 500 mile range of Fredonia. We'd be glad to answer your questions, handout some free-bees and enjoy some good times with fellow CoCo users.

Until next issue - number 6! keep in touch.



# Basic09

## Line Input with Editing

Bob van der Poel

I don't know about you, but I really don't like typing all that much -- especially things I've already typed before. That's why it really gets me upset when I'm using a computer program which makes me retype entries, rather than permitting the editing of existing data.

Most programs written in BASIC use INPUT or LINE INPUT to get information from the user. However these commands do not permit the editing of existing data -- the solution is a specialized input routine which does. I've written a number of these in BASIC, Assembler and BASIC09. The ones written in regular BASIC are generally too slow to be used in a commercial program; the ones in Assembler are difficult to interface to existing programs; but the one in BASIC09 works perfectly -- another tip of the hat to my favorite language!

The procedure LINEDIT was developed for use in any BASIC09 program which needs to use INPUT commands. In fact, most of my programs never use INPUT -- they all call LINEDIT.

To use the program you must first set up some things:

1. Create a string to actually edit. If you are editing existing data then you can just pass the data to the routine (you should however add some blanks to the end so that characters can be inserted). If you are just asking for new input then create a string of blanks.

2. Set the variables for the X/Y coordinates. Note that the variables must be of type BYTE.

3. RUN LINEDIT.

Following is a simple program which uses the routine:

PROCEDURE Test

```
DIM text:STRING[100]
DIM x,y:BYTE
DIM key:BYTE
```

```
text=""
FOR t=1 to 40
text=text+" "
NEXT t
```

```
PRINT CHR$(12);
READ X,Y
RUN Linedit (x,y,text,key)
```

```
READ X,Y
PRINT CHR$(02);CHR$(X+20);CHR$(Y+20);
PRINT "Linedit was exited with a CHR$(";
VAL(key); ")"
PRINT "You entered: "; text
```

```
PRINT "Now change it:";
READ X,Y
RUN Linedit (x,y,text,key)
```

```
DATA 0,3,0,5,0,12
```

When entering/editing text you may use the left/right arrow keys to move the cursor, shift left arrow to delete the character at the cursor, and shift right arrow to insert a blank at the cursor. The routine is always working in overstrike mode. To exit the routine simply press <ENTER> or any other control key (eg. up/down arrows, etc.) The advantage of having multiple exit keys is that the main program can check to see how Linedit was exited and take appropriate action . . . perhaps move to the previous field if the up arrow was pressed, etc.

If you examine the program listing you'll see some interesting techniques. First off, in Linedit, the first thing done is a call to another procedure "ScreenSize". This routine returns the width of the window -- information required since Linedit is not set up to permit the entry of a line which wraps to another screen line. We also turn off the cursor and turn off the echoing of keys which normally appears whenever a key is pressed.

The main loop of the program simply gets a keypress, checks if it's a valid ASCII character and stuffs it into the string. We use a POKE to insert the character since it's much quicker than inserting it with string commands. If the keypress is not a character the procedure moves the cursor, etc.

The procedure ScreenSize uses SYSCALL to determine the current screen type and width with simple GetStat calls.

Linedit as it is currently written has a couple of flaws: First off, it forces a "TMODE ECHO" when it ends -- it might be that the program calling Linedit already had ECHO turned off and don't appreciate Linedit turning it on. Also, lines can not wrap to a second screen

^ Continued on page 35



# ``` PROCEDURE linedit ```

```
0000 (* Line input routine with visual editing
0001
0002A (* Copyright 1988
0003C (* Bob van der Poel
0004F
00050
00051 (* Requires: SCREENSIZE
00068
00069 (* Calling procedure:
0007E (* RUN LINEDIT (XPOS, YPOS, TEXT, EXITKEY)
0008
0009 (* xpos, ypos: byte variables for cursor x,y initial pos
000A9 (* exitkey: string, returns key used to exit (up/down/enter)
000E1 (* text: string of text to be edited
0011D
00141
00142
0015C
0015D
00193
001C9
001FC
001FD
00209
00218
00227
00228
0023F
0024F
00258
0025F
00260
00290
00296
002C7
002D3
002E2
002E6
002E7
0031A
00328
00329
0032B
0032F
00338
00341
00342
0036E
0036F
0037C
0039B
0039F
003A1
003A2
003D0
003D1
003DE
00400
0040C
00410
```

```

(* Line input routine with visual editing
(* Copyright 1988
(* Bob van der Poel

(* Requires: SCREENSIZE
(* Calling procedure:
(* RUN LINEDIT (XPOS, YPOS, TEXT, EXITKEY)
(* xpos, ypos: byte variables for cursor x,y initial pos
(* exitkey: string, returns key used to exit (up/down/enter)
(* text: string of text to be edited

PARAM Xpos,Ypos:BYTE; Text,ExitKey:STRING[80]

(* note: the above PARAM sets a max string length of 80
(* chars. It's okay to pass a smaller string, but if a
(* longer one is passed it will be truncated to 80.

DIM Key:STRING[1]
DIM Cpos,MaxSize,KeyVal:BYTE
DIM Stype,Nrows,Ncolumns:BYTE

RUN Screensize(1,Stype,Nrows,Ncolumns)
Text=LEFT$(Text,Ncolumns-Xpos)
MaxSize=LEN(Text)
Cpos=1

(* turn off echo mode so the keypressed doesn't
(* appear and turn off the cursor to keep things tidy.

PRINT CHR$(805); CHR$(820);
SHELL "mode -echo"
GOSUB 100

(* This is the main loop. We stay here until a <CR>
(* is pressed.

LOOP
  GOSUB 120
  GET #1,Key
  KeyVal=ASC(Key)

  (* delete char at cursor if shift/left arrow

  IF KeyVal=18 THEN
    Text=LEFT$(Text,Cpos-1)+RIGHT$(Text,MaxSize-Cpos)+" "
    GOSUB 100
  ENDIF

  (* insert blank at cursor if shift/right arrow

  IF KeyVal=19 THEN
    Text=LEFT$(Text,Cpos-1)+" "+RIGHT$(Text,MaxSize-Cpos+1)
    Text=LEFT$(Text,MaxSize)
    GOSUB 100
  ENDIF
```

line. Both these shortcomings can be overcome . . . how about it? Can you do it? Hey, let's make this into a CONTEST. For a prize I'll buy the first person sending me a new version which fixes both shortcomings a lunch at a local eatery. Getting to Edmonton is at your expense . . . .

If you have ideas for future BASIC09 columns please write. My address is:  
17435-57 Avenue  
Edmonton, Alberta  
Canada, T6M 1E1.

Continued from page

called Wiz. Early on, many told me that Basic09 would be too slow.. well Wiz is faster than ANY OS9 terminal program that I know. Wiz is written in Basic09. Why is it faster? Terminal programs do the following: get a character from the port, put it on the screen, save it in the buffer, save it to disk, get a character from the keyboard, send it to the host, get a character from the port...etc. etc.

Wiz is different. Wiz says: "OS9, find out if there are any characters from the port & how many, then put that number (whatever it is) in the buffer, to the screen, to the disk." Then, "OS9 find out if there is anything from the keyboard..., and when you've done all that, sleep a while, then do it all over again." Wiz is lazy, most of the time it doesn't do anything, it just give OS9 a little guidance and then gets out of the way. That's why it's so fast. In fact, you can't do it faster unless you bypass OS9.

So what is the key to all of this? A tiny program called "syscall". Syscall is just a very simple interface between Basic09 and OS9. Just a tiny key to computing paradise.

I hope in this column not to just tell you how to use syscall, but why and when. Next issue: Master Basic... someone whispered in his ear, using Syscall.



```

0612 (* move cursor 1 pos. left if left arrow
0613
0614 IF KeyVal=$08 AND Cpos>1 THEN
0615     GOSUB 110
0616     Cpos=Cpos-1
0617 ENDIF
0618 (* move cursor 1 pos right if right arrow
0619
0620 IF KeyVal=9 AND Cpos<MaxSize THEN
0621     GOSUB 110
0622     Cpos=Cpos+1
0623 ENDIF
0624 (* if key is ascii character insert it into the buffer
0625 (* and increment the cursor pos.
0626
0627 IF KeyVal>=32 THEN
0628     POKE ADDR(Text)+Cpos-1,KeyVal
0629     GOSUB 110
0630     IF Cpos<MaxSize THEN
0631         Cpos=Cpos+1
0632     ENDIF
0633 ENDIF
0634 (* Test for a non-ascii key and exit if it is.
0635 (* Note: check for the 4 permitted keys done
0636 (* here -- it's more efficient than doing
0637 (* conversions after the loops above.
0638
0639 EXITIF KeyVal<32 AND NOT(KeyVal=8 OR KeyVal=9 OR KeyVal=$18
0640 OR KeyVal=$19) THEN
0641     ExitKey=Key
0642 ENDEXIT
0643
0644 ENDLOOP
0645
0646 (* This is the exit from the edit routine. The tmode call
0647 (* turns echo back on, the print enables the regular
0648 (* cursor.
0649
0650 GOSUB 110
0651 PRINT CHR$(5); CHR$(21);
0652 SHELL "tmode echo"
0653 END
0654
0655 (* this subroutine displays the entire line in normal
0656 (* video at the x/y pos passed to the procedure
0657
0658 PRINT CHR$(1F); CHR$(21);
0659 PRINT CHR$(2); CHR$(Xpos+$20); CHR$(Ypos+$20); Text;
0660 RETURN
0661
0662 (* This subroutine displays the character at the cursor
0663 (* pos in normal video
0664
0665 PRINT CHR$(1F); CHR$(21);
0666 GOTO 130
0667
0668
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0674
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# Product Reviews

Ralph Dahlgren

Mike Dooley KE4PC

Flight Simulator II  
SubLogic Corporation  
Available at Radio Shack

Requires 128k CoCo 3 & one disk drive.

by Mike Dooley

SubLogic has done a wonderful thing for those of us with COCO 3's and a yen to fly. They've ported their Flight Simulator II over to the COCO 3! Yes, it's true... those of you who've been eyeing your friends Commodore 64 or Apple II computers and wishing you had one just because they could fly that neat Flight Simulator program can smile, smile, smile!

The version for the COCO 3 is almost exactly like those for the C64 and Apple computers. Only a few items aren't supported. They consist of sound generation (which I kind of miss) and engine mixture control (which I don't). There's also some information included telling how to "log-in" a scenery disk. There aren't any scenery disks available yet, but they're coming soon I hope. Hmmm, as usual I'm getting ahead of myself. Let's get back to the issue at hand... If you enjoy flying (real or radio control) or have ever wanted to, this program is for you. It's NOT a game! It truly is a simulation.

When first booted the program places you at Meigs Field in Chicago, Illinois. The Chicago area is one of four scenery areas you can fly in. Others include the New York and Boston Area, the Los Angeles Area and the Seattle Area. In each area there are 19 to 23 airports. They range from New Yorks Kennedy International to Riverside Municipal.

The airports in each area have all of the things needed to fly your aircraft (which is a Piper P-28-181 Archer II). There are VOR, ADF and VORTAC stations used to tell where and how far away you are. ATIS is used like a radio to give you flight and weather information. There's even one airport in each area that handles ILS traffic!

Probably the neatest thing about this program is it's very close to flying a real aircraft. You can plan your flight from point to point. Pick up various beacons to check on your flight path and, if you run low, stop to refill your fuel tanks along the way. The most realistic thing is time. If you calculate it will take three hours flying time to reach your des-

tinuation be prepared to sit there for three hours. There aren't any atomic boosters to help you out. I guess that's what makes this program so interesting. It sticks to what realistic flying is all about.

Oh, yes! For those of you who enjoy Radio Control flying this is a real treat. Using a joystick on the COCO 3 ain't nuthin' like that C64 you've tried! I fly R/C and this rivals it very closely. The right joystick gives you Ailerons (left/right) and Elevator (forward/back) just like the right joystick on your R/C plane. The left joystick is Throttle (forward/back) and Flaps (left/right... drat). It's close, folks, and very responsive.

So what else comes with this package? Well, there are two books. The Pilot's Operating Handbook and Airplane Flight Manual is one and Flight Physics & Aircraft Control with an introduction to aerobatics (!!!) is the other. Also included are four charts (one for each area) and a Flight Reference Card.

Sound complicated? Welllll... It's not really that difficult to fly. If you'll read the first 11 pages of the Pilot's Operating Handbook and Airplane Flight Manual you'll have the program loaded and be in the air in no time. The rest of the features of this fine simulation are just icing on the cake! See ya' in the air!

## Definitions

VOR - VHF Omni-Directional Range - a system providing azimuth information relative to one site.

ADF - Automatic Direction Finder - An aircraft radio navigation system which senses and indicates the direction to a non-directional radio beacon ground transmitter.

VORTAC VHF Omni-Directional Range/Tactical Air Navigation - A VOR station that also includes distance information to that site.

ILS - Instrument Landing System - Used to provide an approach path for exact alignment and descent of an aircraft on final approach to a runway.

ATIS - Automatic Terminal Information System - Automated system giving weather and runway information.



# Telewriter-128™

## the Color Computer 3 Word Processor

For over 5 years now, Telewriter has been the #1 Color Computer word processor, both in popularity and in performance. Telewriter's near perfect mix of sophisticated professional features and a very natural user interface, has earned it the highest praise in numerous magazines, and an intensely loyal following among tens of thousands of Color Computer users all over the world.

### HISTORY

Throughout the history of the Color Computer, Telewriter has pioneered software breakthroughs that set the standards.

In 1981, it was Telewriter 1.0 that first took the Color Computer's inadequate 32X16 all-uppercase display, and replaced it with a graphics-based 51X24 upper and lowercase display.

A few years later, Telewriter-64 added high density 64X24 and 85X24 displays and access to the full 64K of the newer Color Computers.

### THE NEW AGE

Today, Telewriter-64 is recognized as the standard Color Computer word processor. It runs on all Tandy Color Computers — from the original Color Computer 1, to the Color Computer 2, and 3.

But the Color Computer 3 brings a whole new level of power to low cost computing and, so, a new Telewriter is here to put that power to work for you. We call it Telewriter-128.

### TELEWRITER-128

You don't mess with a good thing, so Telewriter-128 is still Telewriter-64 at heart. The commands, and the user interface are essentially the same. If you know Telewriter-64, then you already know Telewriter-128. And, if you don't know Telewriter-64, you'll still have an easy time learning and using Telewriter-128.

### 80 COLUMNS

But there are major differences as well. First, Telewriter-128 uses the Color Computer 3's new 80 column screen display.

This means, simply, that using Telewriter-128 on a low cost Color Computer 3 will look a lot like using a more expensive word processor on a much more expensive IBM PC, PS/2, or clone.

### SPEED

Second, Telewriter-128 is lightning fast. Telewriter-64 was fast in its own right, but, by accessing the Color Computer 3's video hardware directly, and by running the machine in double speed mode, Telewriter-128 is able to provide extremely fast scrolling and instant paging — functions whose speed is crucial to serious word processing.

In this department, Telewriter-128 doesn't simply keep up with IBM-based word processors — it generally surpasses them!

### EASE

Third, Telewriter-128 adds a host of new features big and small, that make it even easier to use.

Features like: Quick function key access to the editor or the menus — an instant on-line help screen summarizing all Telewriter commands and special characters — an option file where you store your personal set of format and screen settings so you only have to set them once!

Then, there's a quick save feature which allows you to save all your current work without leaving the editor. There's a simple way to cursor through the disk directory and read in a file by just hitting ENTER. And there's more.

### NEW POWER

Telewriter-64 always had the power to handle any kind of serious writing, from letters to textbooks. But, here too, Telewriter-128 adds major features.

Like Macros — which let you insert whole words or phrases (even sets of control codes or format commands) into your text, with a single keypress. And every time you power up Telewriter-128, the macro definitions are automatically loaded\*, so they're always there.

Then there's a Print Preview feature that shows you, on-screen, the way your printed text will look — with margins, headers, centering, justification, page numbering, and page breaks. This guarantees letter perfect documents every time, and makes tasks like widow/orphan line elimination, a breeze.

### TELEWRITER-64 or TELEWRITER-128

We could go on listing features, but the point is this: If you own a Color Computer, you already have the hardware for the most powerful, low cost word processor in town. All you need now is to add the heart and soul:

**Telewriter-64**, for the Color Computer 1 and 2, costs \$59.95 on disk, \$49.95 on cassette.

**Telewriter-128** for the Color Computer 3 costs \$79.95 on disk, \$69.95 on cassette.

To order by Mastercard or Visa call (619) 755-1258 anytime, or send check or money order plus \$2 shipping (Californians add 6% sales tax) to:

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Del Mar, CA 92014

To upgrade from Telewriter-64 to Telewriter-128, return your original disk or cassette with \$39.95. (Add \$10 if you're also upgrading from cassette to disk. Deduct \$10 with proof of Oct '87 - Feb '88, purchase of Telewriter-64.)

*When I first got Telewriter-64 last year, I was in heaven. I couldn't believe the program's versatility and ease of use.*

-The RAINBOW, Oct. 1985

**TELEWRITER-64 FEATURES:** Compatibility with any printer that works with the Color Computer; embedded control codes for underlining, boldface, sub superscript, variable fonts; format commands for headers, centering, margin and spacing changes anywhere in the document; Format menu to set margins, spacing, page numbering, BAUD rate, lines per page, justification; Chain printing for one shot printing of multi-file documents; Fast, full screen editor with wordwrap, block copy/move/delete, global search and replace, wild card search, fast 4-way auto-repeat cursor, fast scrolling, forward and backward paging, text alignment, tabs, error protection, word and line counter, Insert or delete text anywhere on the screen. Simple, easy to remember commands. Optional ASCII files for compatibility with spell checkers, terminal programs,

and BASIC. Load, save, append, partial save files to disk or cassette. Kill, rename and list disk files. Cassette verify and auto-retry on error.

**TELEWRITER-128 - ADDITIONAL FEATURES:** Print preview from editor; multiple copy print, footers; hanging indents; cursor thru disk directory to load, append, rename and kill files; quick file save from editor; keyclick; key repeat; true block move; 24, 25, or 28 line screen; 40 or 80 column screen; dual speed cursor; on-line help; overstrike mode; word delete; wordwrap at margin; user definable macros; nested macros; instant status window for information on cursor position, word count, etc.; instant function key access to menus or editor; options menu for setting character and screen colors, key repeat and delay rates, definable foreign symbols.





# The "Wegert Report"

## Steve Wegert

In a tiny corner of CompuServe Information Services sits a group of related special interest groups called TANDYNET. Managed by Golden Triangle Corporation, two of the groups include the "Color Computer Forum" and the "OS9 Forum". Welcome to "The Wegert Report", the first of what's to become a regular part of the CoCo Clipboard.

In the issues to come, we'll try to cover topics that will be of interest to those CompuServe subscribers that call the COCO and OS9 forums home. If you have suggestions on what you'd like to see covered, drop me a note. If you're on CompuServe, my User ID is [76703, 4255] and I can be found on both forums nightly. Leave a message in either area or via EasyPlex, CompuServe's electronic mail service. In the meantime, let's take a look at what's new on the 'boards'!

### COMPUSERVE RELEASES NEW FORUM SOFTWARE

New menus and intuitive commands will be the most notable changes in the new forum software scheduled for release later this spring. To test drive the new commands in a forum where you are comfortable, append a ;NEWF to the end of your User ID number. For example, key 76703,4255;NEWF when logging on and the new software will follow you around the service. To return to the old format, simply type OF at a forum prompt. Old commands not in conflict with the new software will continue to be supported. CompuServe has developed a FREE practice forum to allow users the chance to become comfortable in the new environment. While in Practice Forum all connect charges are suspended. Type GO PRACTICE for more information.

### DATAPAC ASSISTANCE

In response to a reader's request for assistance, the following information should be helpful in accessing CompuServe via the Datapac alternate network.

According to Conrad Kageyama, a SYSOP with the IBMNET group found on CIS, Datapac now has an automatic interface to CIS. Simply log on to Datapac and use the P 29400138 address to get to CIS. CIS and Datapac will take care of the proper handshaking in order to enable binary transfers. The user just dials the Datapac node. When Datapac answers, simply tell it the baud rate (one period for 300 baud, two periods for 1200 baud). When Datapac asks for the port address, just give it P 29400138 and you should

then get the Host prompt. The login should proceed normally from that point. Type GO LOG-41 for detailed information on Datapac access.

### PETE'S EXTERNAL IRQ HACK

When many of us upgraded to the CoCo 3 and OS9 Level II, we found that serial communication was less than reliable. Most notable was the loss of characters at the higher baud rates and indiscriminate lockups.

Pete Lyall [76703,4230], Associate Sysop of the OS9 forum, offers this solution via a hardware approach. "In a nutshell, it's connecting the land that used to go to pin 8 (CART interrupt) to CPU pin 3 (IRQ) in the CoCo."

You will need to remove the blue jumper (near the edge connector) in the RS-232 pak, and solder a long wire to the solder pad marked '1'. Attach the other end of the wire inside the CoCo 3 to the side of R2 closest to the keyboard. Some type of connector inline is recommended for easy removal of RS232 pack from the CoCo 3.

Drop Pete a note on the OS9 Forum for more details.

### MULTI-VUE: TRIALS AND TRIBULATIONS

Tandy's recent offering is a slick user interface into the world of OS9. Deemed a 'working environment' by the folks in the Towers, it offers a very friendly entry into the OS9 operating system.

It's not without it's problems, however. Spotted very quickly and reported on both the CoCo and OS9 forums were two rather large problems. Multi-VUE doesn't like three letter file name extensions following a dot and it doesn't think folks will have more than 255 files in a directory.

Posted in DL10 of the OS9 forum is GSHELL.AR by Kent Meyers that fixes those two critters, speeds up the program overall, and adds a few other goodies. It's a must have for serious MV users. BROWSE GSHELL in DL10.

### WHAT'S THE MODEMPAK GOOD FOR?

Have you purchased a Tandy Modempak (26-2228) and think you've made the biggest mistake of your adult life? Fear not. Mike Ward has tweaked (yet again) Mikeyterm to allow it's use with different serial boards.



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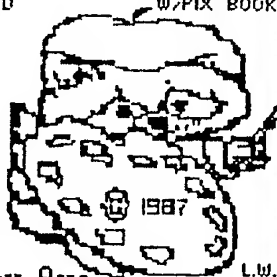
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interview with CoCo programmer Bob van de Poel. Transcripts are posted in Data Library 1 of the CoCo Forum for those who missed the actual event. Look for:

2-13CO.TXT "CoCo and the Press"

3-12CO.TXT "CoCo, Databases and Small Businesses"

4-09CO.TXT "An Evening with Bob van der Poel"

If you have an idea for an upcoming conference, drop a line to Ted Paul [72240, 21], on the CoCo Forum.

That's a wrap for this issue folks, thanks for looking in. If you'd like to become active on CompuServe and don't know how, drop me a line in care of this magazine. Include a stamped, self addressed envelope and I'll send an information kit by return mail.

=30=

Grab two files found in the CoCo Forum's DL6 called MTPAK.HLP and MTPAK.BAS. Both will help you create and patch Mikeyterm for use with the Modempak.

### I HEAR MUSIC

The CoCo and music have always gotten along. From the early days of KOMPOS.CC, one of the first music composition programs for the CoCo, (and still in DL 4 of COCO) to the now popular Lyra and CoCo Midi programs, the Color Computer has shown itself capable in this arena. The interest continues!

Lester Hands [70135,430], author of Lyra, has uploaded a rather full featured demo of the most current version. LD250.BIN struts it's stuff in the CoCo Forum's DL4 and will play the numerous Lyra files found in DL4).

MIDI (Musical Instrument Digital Interface) interest has been running wild in the OS9 Forum. So much so, Forum Administrator Wayne Day has opened a separate subtopic and data library for the traffic. Check out the OS9 Forum's DL4 for the latest and greatest in MIDI and MUSIC.

### CLIPBOARD SPONSORS CONFERENCES

On the second Saturday of each month, COCO CLIPBOARD holds court with a scheduled conference. Moderated usually by Dan Robins [73007,2473], the topics have ranged from media coverage of the Color Computer to an in-

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Stock Market portfolio for the color computer will keep track of all your current stock listings and keep a listing of stocks you have sold by the year, they were sold with all totals, profit and loss, and percentages. More than one person can use this program as long as the first three letters on both first and last name are not the same. The program is menu driven and will give you the option for either screen print or information to be printed on printer.

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# CoCo Clipboard Magazine

## BACK ISSUES

Back issues of CoCo Clipboard are available. They can be purchased for \$2.50 each. There is a \$1.00 postage and handling charge for the first issue ordered and \$.50 for each additional magazine that is purchased.

Vol. 1 Issue 3 Jan./Feb. 1988

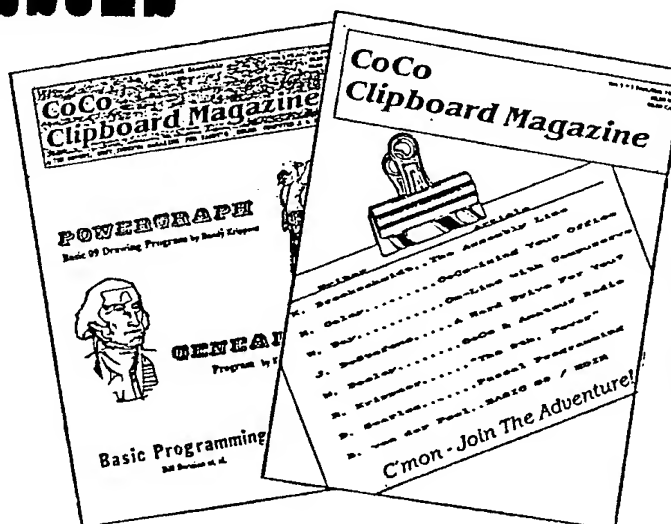
### TABLE OF CONTENTS

From the Desk of by Ted and Darlene Paul.....	
Basic 09 Menu Maker by Bob van der Poel .....	
Database Tutorial Pt. 1 by Rush Caley .....	
Genealogy — Program by Ken Barber .....	<b>Photocopy</b>
Product Reviews by Lee Parker and Ted Paul .....	
Powergraph — Basic 09 Drawing Program by Randy Krippner .....	
BASIC Programming Contest by Bill Bernico et. al. ....	
CoCo Club Corner by Ted Paul .....	
CoCo 'N Amateur Radio by Mike Dooley .....	
Self Correcting Forecasting by Jim DeStafeno .....	

Vol. 1 Issue 4 March/April 1988

### TABLE OF CONTENTS

From the Desk of by Ted and Darlene Paul .....	
Pascal Programming by Delmar Searles .....	
The 9th. Power by Randy Krippner .....	
Basic Help by Bill Bernico .....	
A Better Display by Jim DeStafeno.....	
DataBase Tutorial Pt. II by Rush Caley .....	
Product Reviews by Paul Bornemann, Lee Parker, Ted Paul .....	
The Assembly Line by Kraig Brockschmidt.....	
CoCo 'N Amateur Radio by Mike Dooley .....	
BLIST for BASIC09 by Bob van de Poel .....	



Vol. 1 Issue 2 Nov./Dec. 1987

### TABLE OF CONTENTS

From The Desk of by Ted and Darlene Paul .....	
The Assembly Line by Kraig Brockschmidt .....	
"The 9th Power" by Randy Krippner .....	
The Dream Machine by Jim DeStafeno .....	<b>Photocopy</b>
Pascal Programming by Delmar Searles .....	
On Line with CompuServe by Wayne Day .....	
Product Reviews by Clipboard's Review Crew .....	
CoCo-izing Your Business by Rush T. Caley .....	
CoCo 'N Amateur Radio by Mike Dooley .....	
Basic Help by Bill Bernico .....	
Thorns in Basic 09 by Bob van der Poel .....	
Commentary by Paul Bornemann .....	

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Vol. 1 Issue 1 Sept/Oct 1987

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Orders may be sent to:  
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Fredonia, N.Y. 14063



# Clip-ETTES

Jim DeStafeno

(Editors note: Please be advised that CoCo Clipboard Magazine assumes no liability for any of the hardware modifications mentioned in this column. Opening of your computer case may violate your warranty. Be sure to UNPLUG ANY equipment before doing any modifications - just turning off the equipment may not disconnect the power. Please use common sense and caution in any modifications to your equipment.)

## - EXPAND YOUR -3 DISPLAY TO THE CORNERS:

If your CoCo-3 display doesn't fill the screen, try the following; use it in all your 80 column programs. It can even be modified to get up to 128 columns and/or 28 lines, all from BASIC. Talk about your cooperative effort, this goodie was worked on by van der Poel, Kraig Brockschmidt, an unidentified fellow on a local BBS and myself.

```
10 '*****
20 '*   TALL SCREEN   *
30 '*****
40 POKE&HFF98,4:POKE&HFF99,&H75
60 POKE&HE045,4:POKE&HE046,&H75
80 POKE&HFE05,24:POKE&HFE06,47
100 POKE&HFE07,160:CLS
120 POKE&HFE07,0
```

## - SPEEDUP DOS COMMAND ACTION:

Guess everyone knows how to make the DOS start any disk program automatically. (Bob van der Poel has a DOS chip that will invoke DOS on startup; no need to type "DOS". The RGB DOS chip does a similar thing. Can't use both at the same time.)

The following will allow choices in the Direct Mode; thereby allowing the programming of a menu DOS can use; don't have to call in a menu program. We've got horse power and speed in BASIC we ain't begun to tap. The secret is EXEC44539:A\$=INKEY\$.

The drill is; (a... ) CLS: (then setup the menu...) ?"CHOOSE ONE OF THE FOLLOWING": (then the program or action, you want to choose from... ) ?:"1 - TALL SCREEN":?"2 - COPY": (whatever you want to load/run or do, then...) EXEC44539:A\$=INKEY\$: (followed by IF/THEN statements to fit the choices, like... ) IF A\$="1" THEN RUN"TALLSCR" ELSE IF A\$="2" THEN RUN"COPY" ELSE IF....

The only restriction is all has to fit in 255 characters, one line; no line number. The

elimination of calling in a menu program really makes things move right along; snap, snap, snap... and on the RGB HD it is a near explosion.

## - CoCo 3/Gemini-10X PRINTER FIX:

Don't know about your printer, but my 10X went crazy on the -3. Talked with Roger Krupski of RGB DOS fame. If your printer is skipping characters and even lines at the higher baud rates on a -3; (Take a deep breath and don't blame me, CCM, Tandy or ... if anything goes wrong), unplug the computer from the wall socket, flip it over and remove the six screws that hold the case together, (voids the warranty), turn the computer right side up and remove the top half of the case.

Lift up the key board, flip it upside down and lay it down at the rear of the computer (all gently). No need to disconnect the clear ribbon cable.

At lower lefthand corner area of the board, fine the resistor next to the small lettering on the board that says R-66. Using clippers, diagonal pliers, fingernail clipper, whatever; clip the "wire" from the resistor close to the board.

Lift the end of the resistor a bit, put everything back together again, including plugging the computer back into the wall and stand clear as your printer takes off at an errorless 9600 baud. Thank you Roger, that trick paid for half of the HD cost; don't have to buy a new printer.

Oh yes, what does the resistor do? Roger says it keeps the computer from "hanging up" when the printer is OFF and a command to print is sent. Just don't ask the printer to print when the printer is OFF; "Hello, hello; earth calling".

## - KILL THE DISTO SLOT POKES:

Got a Disto Super Controller and are tired of punching in the POKES to make it change slots. Got them scotch taped to your case; clean up the act and get 100% results the first time. Punch in ver der Poel's trick. I SAVEed it as "DOSEN" and had DOS call it until I found EXEC44539:A\$=INKEY\$ would work directly from within a DOS "program".

^Continued on page 44



# SUN PRODUCTS

(407) 240-4784

5455 Hansel Avenue • Bldg. L - Suite 7 • Edgewood, FL 32809-3405 • ~~1985-1986-1987~~

April 22, 1988

To: All Color Computer Owners  
Fr: Sun Products  
Re: Changes and sorts

Dear Color Computer Owners:

A lot has happened to Sun Products since the last issue of Clipboard. For starters, Southern Bell, our long distance company has been so gracious to give Edgewood, and the rest of Central Florida, new area codes. Please not our new telephone number listed above. We sincerely apologize to you if this should cause any inconvenience.

Some of my customers may have noted a rather annoying long delay in receiving their orders. I publicly make a sincere apology for this. In the past two months 4 of my close family relatives passed on and Sun Products closed temporarily. I do not, however, foresee any more deaths in my immediate family. Thanks to all of you who have been so gracious and kind. Also thanks to you who have been understanding.

Since April 1, 1988, Sun Products can now proudly boast that we are America's **largest** distributor of Color Computer products.

I would like to bring to your attention a product we sell called System 5, this is a graphics editor packed with features for the Tandy/ Radio Shack Color Computer 3. It uses the standard Hi- Res pak from Radio Shack. Best of all, it's only \$12.00! This program is available only on diskette.

We now have a catalog for you. This catalog is free, so ignore sending in \$3.00 for it. It is packed with over 150 items with full descriptions!

Some of our other major suppliers include:

Ark Royal, C.K.E., S D Enterprises, Tom/ Mix Software, DieCom Products, Heritage House Lithographers, Elec-Soft, DP Johnson, EZ Friendly Software, CY-Burnet-ICS, Computer Island Software, Sugar Software, and many more!

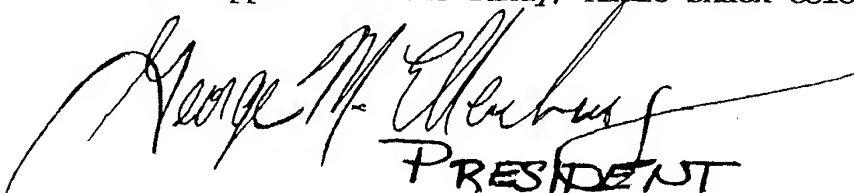
For our free catalog, just call or write. A representative will be glad to take your call.

## NEW DEVELOPMENTS

Everyone has heard of Tandy Home Publisher, but watch out, due to be released July 1st, **Personal Publisher** is a desk top publishing program for the Color Computer 3 featuring:

- \*640x 200 resolution
- \*Up to 20 pictures in the document
- \*A full text editor and graphics editor
- \*Comes with 4 fonts with over 10,000 more coming!
- \*Preliminary retail price is \$34.95. Call for more details!

Thanks in the past to all our past customers! Remember, if you need anything for the Color Coputer, we've got it and if we don't, you probably don't need it! **Sun Products, offering products and support for the Tandy/ Radio Shack Color Computers 1, 2, & 3.**

  
PRESIDENT



Just input the following, in the DOS program with no line numbers, all in one line. Other wise use it as shown. Neat clue on how to POKE in HEX quickly too; no DATA/READ.

```
10 PRINT "WHICH SLOT? ";:EXEC44
539:SL$=INKEY$:SL=VAL(SL$)
30 O1$=RIGHT$("0"+HEX$(SL),2)+
7FFF57A68CF9B7FF410F716E9FFFFE"
:FORO1=0TO16:POKE500+O1,VAL("&H
"+MID$(O1$,O1*2+1,2)):NEXT
50 EXEC501
```

#### - HIGH SPEED DISK I/O:

Seems high speed disk I/O errors are not a fault of the controllers, but rather the RS-DOS. I've got an old J&M controller doing hi-speed I/Os faultlessly on a -3; the same speed as the super hi-speed poke on a -2. What's the secret? Get RGB DOS. Works with a -1, -2 or -3; floppy or hard disk; with or without a "Y" cable. In addition, there are a ton of other advantages; not to mention the option to plug in a hard disk any time.

Don't forget the normal -2 hi-speed POKE doesn't do a thing for the -3. Use the -2's super hi-speed poke; POKE65497,0 for ON and 65496,0 for OFF.

#### - RUBBER GLOVE SURGERY:

This one ain't for the faint of heart. If you even "think" you might get in trouble here, get some qualified help.

Don't like the looks of the disk controller appendage hanging out of your CoCo? Stick it inside. If your interested in beauty: Lift up the board inside with longer screws and little washers. Remove the disk controller from its can (Such action may violate FCC regulations) and stick it under the board on stand-offs. Connect the board and controller with a shortened "Y" cable. (By the way, a good Radio Shack can get you the "Y" parts for about \$10.) Run the controller ribbon cable out the back of the case.

There seems to be no more or less RF interference. Its OK to bend the ribbon cable 45 degrees on itself to get the proper exit angle.

The above takes a far amount of time and care. The following is quicker, but not so good looking. Again, get qualified help. Just put the controller on top of the board, connected with a shorten "Y" cable. I used two stand-offs on the case's RAM PAC end. If you take the controller out of its can, you may have enough room, or maybe the board can be lowered.

I just cut a hole in the top of the case with a fine hack saw blade. No its not beautiful, but if you do a neat job, it'll look OK. The fact is, I've got two controller size cans stacked on top of each other. The lower one is the interface for the hard disk and the disk controller is on top. That way I can easily remove the disk controller to plug into the -2.

#### - HELP:

Anyone have a Printer ON/OFF PEEK, POKE or whatever that works with a pbh serial/parallel interface and a Gemini-10X printer?

Anyone have any Clipettes they havn't seen in print. Lets get some "share-ware" going on this stuff. Don't forget, no POKES on how to get a disk directory to a printer or a BACKUP on one disk drive. Anyone have something new?



1. Nancy Ewart will be starting her column on "C" programming in our next issue!

2. We'll have reviews on:

Computer Villas Home Pak

Ark Royales new game - Dough Boy

Dynamic Electronics - CCTherm

A second look at RGB Hard Drives

3. Clipboard is looking for a hardware & technical writer. Interested parties should contact the magazine

4. We are also looking for a person to design a comprehensive reader survey. This person MUST have experience in this field.



Stock Market Portfolio  
For The Color Computer  
Papariz Enterprises  
700 York St.  
Williamsburg, VA 23185

64K CoCo I, II, 3 disk only

\$22.00 + \$3.00 s/h

Reviewed by: Ralph A. Dahlgren

Stock Market Portfolio, as the name implies, is a stock tracking program for the Color Computer. The program is written in BASIC and is compatible with all models although it supports disk systems only. The program has been well thought out and performs quite satisfactorily. The accompanying documentation is thorough and leads the user step by step through the system.

Stock Market Portfolio is actually a group of several programs which are called by the main program. The system allows multiple users a wide variety of options including keeping track of personal information, maintaining a listing of currently active stocks, as well as maintaining a listing of all stocks which have been sold for archival and tax purposes. Both the current stock and sold stock portfolios may be printed out for a permanent hardcopy or displayed to your screen. Whenever a user accesses the program, only the stocks in that users portfolio will be displayed, thus making it quite easy for several users to keep their portfolios on the same diskette.

Although I am not currently actively investing in the stock market, I did manage to set up a portfolio and maintain it without any problems. The programs work very well and can even be set up to inform the user if a stock is falling below a preset level of performance. I feel that Stock Market Portfolio could be very helpful to an investor, or even for someone who is contemplating entering the stock market as an educational primer. The one thing which I believe would be a great enhancement would be for the program to account for brokerage fees on purchases and sales of stocks. This however, would require the user to enter the brokerage fee tables for their particular broker. This can tend to be a complicated task for the novice investor, although it would allow the user to see exactly how a stock is performing and whether a stock sale would be profitable. I wrote a program several years ago which incorporated this capability and it was a real lifesaver at times.

I would recommend Stock Market Portfolio to anyone who is seriously interested in stock market investing.

Dear Sir:

A friend of mine told me that you have started publishing a new magazine dedicated to the Radio Shack CoCo. I have been a long time color computer user. I got my first CoCo 1 back in 1980, and since then I have moved up to a CoCo 2, I have one disk drive, but plan on up-ing that to two DSDD drives (I don't know if RSDOS will allow use of DSDD, but I use OS-9 now).

So you can provide better service to your readers, I will tell you the things I am interested in. I am very interested in hardware projects for the CoCo. Two things I would like to find out how to build are (the old standbys) a serial card and parallel card.

Hardware I am thinking of buying: DSDD drives (prob w/ case & power supply), Modem (1200 or 2400 baud), Printer (a really nice dot matrix NLQ).

I look forward to getting my first issue of CoCo Clipboard.

Erik L. Seielstad  
Brockport, NY

Dear Erik:

Brockport has always been one of my favorite places near Lake Ontario. (Brockport is right on the banks of the Erie Canal and has a growing campus of the State University of New York.) We're glad to be sending CoCo Clipboard to you. Spread the word! CoCo users from Rochester, Leroy, Batavia and all along Oatka Creek need to hear about Clipboard!

That wraps up this issues letters column. We'd love to hear from you. Let us know what you'd like to see in our pages and how we help you enjoy your CoCo.





Continued from page

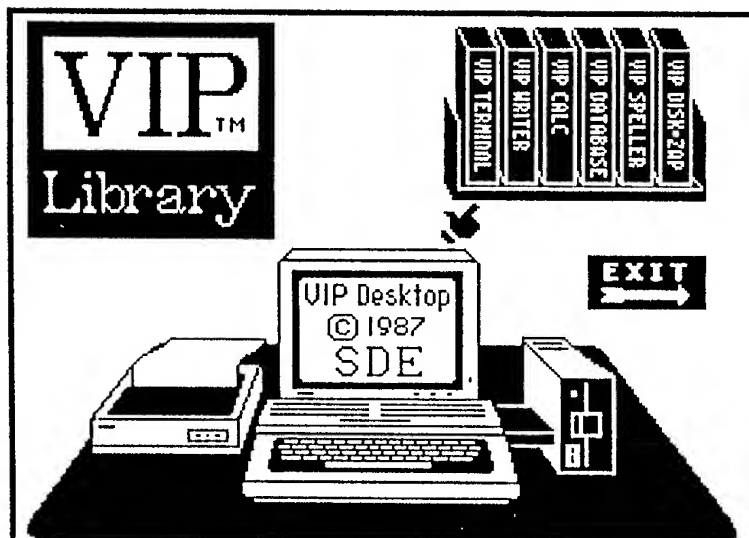
Now type SAVE"EW".

3. Exchange disks again and type COPY"EW/BIN" and hit enter.
4. Exchange disks and hit enter. EW/BIN should now be on the Elite File disk.
5. Exchange disks again and type COPY"EWT/BIN" and hit enter.
6. Exchange disks once more and hit enter. This will put EWT/BIN on your Elite File disk.

See how it's done? For BASIC programs, simply LOAD from one and SAVE to the other. For BINARY programs, use the COPY command and follow the prompts on the screen.

\* \* \*

(Editors Note: Have questions about programming in Basic? You can send your questions to Bill Bernico's "Basic Help Column" here at Clip-board. In addition we will be adding questions on machine language programming very soon! So if your stuck writing machine language programs feel free to write.)



### VIP Integrated Library

The VIP Integrated Library combines all six popular VIP application programs - VIP Writer\*, Speller, Calc, Database, Terminal and Disk-Zap - into one program on one disk. The program is called VIP Desktop. From the desktop you have instant access to word processing with a spelling checker always in attendance, data management with mail-merge, spreadsheet financial analysis, telecommunications and disk maintenance. Just move the hand to the volume on the bookshelf and the application is there. 64K req'd. UNPROTECTED DISK \$149.95

\* CoCo 3 owners: Purchase the VIP Integrated Library /WE (Writer Enhanced) which has VIP Writer III in place of VIP Writer. UNPROTECTED DISK \$159.95

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Please add \$4 for shipping VIP Library. COD orders add an additional \$2.25. Personal checks allow 3 weeks for delivery. All other orders shipped the same day.

## NEW for the CoCo 3!

### VIP Database III

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The VIP Database III features selectable screen displays of 40, 64 or 80 characters by 24 lines with choice of 64 foreground and background colors for maximum utility. It uses the CoCo 3's hardware display and double clock speed to be the FASTEST database available. VIP Database III will handle as many records as will fit on your disk and is structured in a simple and easy to understand menu system with full prompting for ease of operation. Your data is stored in reports of your own design. All files are fully indexed for speed and efficiency. Full sort of records is provided for easy listing of names, figures, addresses etc., in ascending or descending alphabetic or numerical order. Records can be searched for specific entries, using multiple search criteria. With Database III mail-merge you may also combine files, sort and print mailing lists, print form letters, address envelopes - the list is endless. The built-in MAIL package even performs arithmetic operations and updates other files. VIP Database III also has a print spooler and report generator with unlimited print format capabilities including embeddable control codes for use with all printers. UNPROTECTED DISK \$69.95

VIP Database owners: Upgrade to the VIP Database III for \$39.95. Send original disk. Include \$3 shipping.

## Run VIP on your CoCo 1, 2 or 3!

### VIP Database

"ONE OF THE BEST" JULY 1984 "RAINBOW"

VIP Database has all the features of VIP Database III except the screen widths are 51, 64 & 85. Screen colors are black, green and white, double speed is not supported, Spooler is unavailable. Even so, VIP Database is the fastest database for the CoCo 1 & 2! UNPROTECTED DISK \$49.95

### VIP Calc

"MORE USEABLE FEATURES"-Feb 1985 "Rainbow"

Now every CoCo owner has access to a calculating and planning tool better than VisiCalc™, containing all its features and commands and then some. VIP Calc displays 32, 51, 64 or 85 characters by 21 or 24 lines right on the screen. VIP Calc allows up to a 33K worksheet with up to 512 columns by 1024 rows! In addition, VIP Calc has multiple windows which allow you to compare and contrast results of changes. Other features include 16 DIGIT PRECISION • trig. functions • averaging • algebraic functions • column and row ascending or descending SORTS • locate formulas or titles in cells • block move and replicate • global or local column width • limitless programmable functions • works with any printer, Embed printer control codes for customized printing. Combine spreadsheet tables with VIP Writer documents to create ledgers, projections, statistical and financial budgets and reports. Requires 64K. UNPROTECTED DISK \$59.95

### VIP Terminal

RATED BEST IN JANUARY 1984 "RAINBOW"

For your important communications needs you've got to go beyond software that only lets you chat. You need a smart terminal so that you can send and receive programs and messages and print them! The VIP Terminal features 32, 51, 64 or 85 characters by 21 or 24 lines on the screen and has a 43K byte buffer to store information. UNPROTECTED DISK \$39.95

### VIP Disk-ZAP

RAVED ABOUT IN THE APRIL 1983 "RAINBOW"

VIP Disk-Zap is the ultimate repair utility for simple and quick repair of most disk errors. Designed with the non-programmer in mind, the VIP Disk-Zap will let you retrieve all types of bashed files, BASIC and ML programs. The 50 page tutorial makes the novice an expert. UNPROTECTED DISK \$24.95

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# VIP Writer III Summer SPECIAL!

*"...High powered software for the CoCo 3...Fast, easy to use...a true bargain for the serious CoCo user."* —CoCo Clipboard March '88\*

## VIP Writer III vs The Competition

VIP Writer has ALWAYS led the pack with features and now VIP Writer III still leads the way! The chart below illustrates this fact. Telewriter 128 only gives you 48K for text. Why Is It called Telewriter 128? Word power 3 gives only 72K! Where's the rest? VIP Writer III makes use of over 106K! VIP Writer III is the ONLY CoCo 3 WORD PROCESSOR WORTHY of it's name!

WORD PROCESSOR COMPARISON CHART			
CoCo3 with 128K	VIP Writer III	Telewriter 128	Word Power 3
Text Storage	OVER 49,000	48,000	72,000
Print Spooler	YES 57,000	NONE	NONE
Total Storage	106,000	48,000	72,000
Spelling Checker	VIP Speller	NONE	FREE WARE
RGB HD Support	100%	NONE	NONE
Screen Display	32/40/64/80	40/80	80

## SCREEN DISPLAY OPTIONS

As the chart above shows - VIP Writer III offers more screen width options - all with 24 lines and actual lower case letters using the CoCo 3's hardware display! You can choose fore and background colors from up to 64 different hues. Color can be turned ON or OFF for the best possible display using a color or monochrome monitor or TV set. VIP Writer III has a built in on-line context sensitive help facility which displays command usage in easy to read colored windows. VIP Writer III also runs at double clock speed and is FAST!

## TEXT FILE STORAGE

VIP Writer III creates ASCII text files which are compatible with all other VIP Programs as well as other programs which use ASCII file format. You can use VIP Writer III to even create BASIC programs! There is a 49K text buffer and disk or cassette file linking allowing virtually unlimited text space. VIP Writer III works with up to four disk drives and lets you display disk directories and free space as well as rename or kill disk files. In addition VIP Writer III is 100% compatible with the RGB Computer Systems HARD DISK.

## EDITING FEATURES

VIP Writer III has a full featured screen editor which can be used to edit text with lines up to 240 characters long with or without automatic word wrap around. You can select type-over mode or insert mode. There is even an OOPS command to recall a cleared text buffer. Other editing features include: Type-ahead, typamatic key repeat and key beep for flawless text entry, end of line bell, full four way cursor control with scrolling, top of textfile, bottom of textfile, page up, page down, top of screen, bottom of screen, beginning of line, end of line, left one word, right one word, DELETE character, to beginning or end of line, word to the left or right, or entire line, INSERT character or line, LOCATE and/or CHANGE or DELETE single or multiple occurrence using wildcards, BLOCK copy, move or delete with up to TEN simultaneous block manipulations, TAB key and programmable tab stops, word count, line restore, three PROGRAMMABLE FUNCTIONS to perform tasks such as auto column creation and disk file linking for continuous printing.

## TEXT FORMATTING

VIP Writer III automatically formats your text for you or allows you to format your text in any way you wish. You can change the top, bottom, left or right margin and page length. You can set your text flush left, center or flush right. You can turn right hand justification on or off. You can have headers, footers, page numbers and TWO auxiliary lines which can appear on odd, even or all pages. You can also select the line on which they appear! You can even change the line spacing! Parameters can be altered ANYWHERE within text.

## PREVIEW PRINT WINDOW

The VIP Writer III features a paper saving format window which allows you to preview your document BEFORE PRINTING IT! You are able to see centered text, margins, page breaks, orphan lines etc. This makes hyphenation a snap!

## PRINTING

VIP Writer III prints TWICE as fast as any other CoCo word processor! VIP Writer III supports most any printer serial or parallel using the parallel interface described in Nov-Dec. '87 RAINBOW magazine, or ANY external serial to parallel interface, and gives you the ability to select baud rates from 110 to 19,200. You are able to imbed printer control codes anywhere in your text file EVEN WITHIN JUSTIFIED TEXT! VIP Writer III also has twenty PROGRAMMABLE PRINTER SEQUENCES which allow you to easily control all of your printers capabilities such as underline, bold, italics, superscript and subscript using simple keystrokes. Additional printer features include: single sheet pause, print pause, word length and line feed selection.

## PRINT SPOOLING

VIP Writer III incorporates a built in print spooler with a 57,000 character buffer which allows you to print one document WHILE you are editing another. You don't have to wait until your printer is done before starting another job!

## DOCUMENTATION

VIP Writer III is supplied with a 125 page instruction manual which is well written and includes many examples. The manual has a tutorial and glossary of terms for the beginner as well as a complete index! VIP Writer III includes VIP Speller at NO ADDITIONAL COST. UNPROTECTED DISK \$79.95  
Cassette version does not include VIP Speller. TAPE \$59.95

VIP Writer owners: Upgrade to the VIP Writer III Disk for \$49.95 or Tape for \$39.95. Send original disk or tape. Include \$3 shipping.

## VIP Writer THE ORIGINAL

VIP Writer is also available for CoCo 1 and 2 owners and has all the features found in the VIP Writer III including VIP Speller except for the following: The screen display is 32, 51, 64 or 85 columns by 21 or 24 rows. Screen colors are green, black or white. Help is not presented in colored windows. Double clock speed is not supported. Parallel printer interface is not supported. Print spooler is not available. Hard disk is not supported. Even so, VIP Writer still out-features the rest! It's a CoCo 1 or 2 owners best choice in word processors. Includes VIP Speller. UNPROTECTED DISK \$69.95  
Cassette version does not include VIP Speller. TAPE \$49.95

## VIP Speller SPELL CHECKER

VIP Speller works with ANY ASCII file created by most popular word processors. It automatically checks text files for words to be corrected, marked for special attention or even added to the dictionary. You can even view the misspelled word in context! VIP Speller comes with a specially edited 50,000 word dictionary, and words can be added to or deleted from the dictionary or you can create your own. UNPROTECTED DISK \$34.95

## It's Word Processor Trade In Time

For a limited time you can trade in your old software for the VIP Writer I or III and get the VIP Speller FREE! Send in your old disk or tape and manual. VIP Writer tape \$34.95, disk \$49.95. VIP Writer III tape \$44.95, disk \$59.95. Include \$3 S/H. Tapes do not include VIP Speller. Expires 8/31/88

*See our other ads for more VIP Products!*

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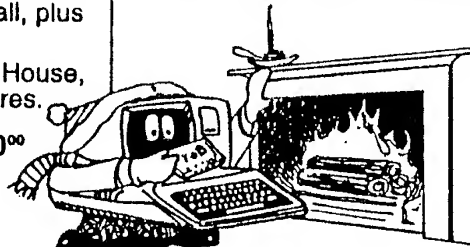
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